PUBLIC HEALTH REPORTS

VOL. 35 AUGUST 20, 1920 No. 34

THE TREATMENT OF LEPROSY.

WITH ESPECIAL REFERENCE TO SOME NEW CHAULMOOGRA OIL DERIVATIVES.

By J. T. McDONALD, A. M., M. D., Director, Leprosy Investigation Station, United States Public Health Service, and Superintending Physician to Kalihi Hospital, Hawaii; and A. L. DEAN, A. B., Ph. D., President and Professor of Chemistry, University of Hawaii, Honolulu.

Leprosy not an incurable disease.

From a careful review of the medical literature upon the subject for the past decade or two, one can not avoid the conviction that there has arisen a new confidence in the curability of leprosy. Unna delivered an address upon "La Pathologie et la Thérapeutique de la Lèpre," in which he declares that the time has happily gone by when, according to common opinion, leprosy was considered incurable, and when every physician who would not permit himself to be tyrannized by that disheartening dogma was met only by a charitable smile. He declared that leprosy was making its way on the same ground as tuberculosis and that it was only the persistent, faithful work of a few physicians who were not satisfied with that easy-going doctrine that had brought about the hopeful change.[1]

Unna's dicta and opinions have been respected and frequently quoted by writers upon the subject the world over. It is a significant fact that at the Second International Conference on Leprosy, held in Bergen, Norway, in 1909, at which this Station was represented by its Director, the late lamented Surg. Donald H. Currie, United States Public Health Service, that body declared by formal resolution that "The clinical study of leprosy induces the belief that it is not incurable."[2] So many successful results are to-day being obtained in the treatment of the disease in various parts of the world, that the statement still occasionally seen that leprosy is incurable is, to say the least, an anachronism.

This paper will recite briefly the methods of treatment we have found useful.

[1] Les temps sont heureusement passés, où, d'après l'opinion universelle, la lèpre était incurable, où chaque médecin qui ne se laissait pas tyranniser par ce dogme désolant ne recueillait qu'un sourire charitable. La lèpre a fait, en cela, le même chemin que la tuberculose. Ce n'ont été que les bons succès de quelques médecins, qui ne se contentaient pas de ce "dogme de commodité," qui y ont produit un changement.—XV Congrès International de Médecine: Lisbonne, 1906, Section VIII, Dermatologie et Syphiligraphie, 2 me fascicule, p. 310.

[2] Public Health Reports, Vol. XXIV, No. 38, p. 1357.

General Measures in Treatment of Leprosy.

As a prerequisite to, and combined with, specific medication, especial importance is placed upon the general welfare of the patients. The food is of good quality, ample, well-cooked, and well-served in cheery dining rooms. In the dormitories, the patients care for their own rooms and are held to account for neatness and cleanliness both in person and in surroundings. Idleness is discouraged and meditative moping is not permitted. The adult males find occupation and diversion in vegetable and flower gardening, care of the live stock, repairs and painting, upkeep of lawns, etc., and the women busy themselves with the usual activities of home life, except the cooking and serving of meals. The younger boys and girls attend school a few hours daily under a teacher patient, and behave during the rest of the time precisely as do children everywhere. The entire community plays tennis, baseball, volley ball, basket ball, croquet, billiards, etc., and in the evenings, dances and movies in the Assembly Hall are of frequent occurrence. The patients have their own stringed orchestra and singing club and every few weeks stage a play or a concert with costumes of their own design and making. There is a spirit of good cheer and hopefulness, each one determined to achieve a cure. Cases which improve to the point where the clinical signs have disappeared and the bacillus can no longer be demonstrated are recommended for parole by the physician in charge. A board of three physicians is appointed by the board of health and this board passes on the advisability of allowing the patient to go out, as no longer a menace to the public health. Paroled patients are required to report at stated intervals. The care received, the spectacle of fellow patients being paroled, and the general atmosphere of the hospital lead to a high state of morale; such effects on physiological tone as may be due to mental condition are highly favorable.

On the arrival of new patients at the hospital, after their official examination and formal admission, our first care is to give them a thorough examination to learn what they need to improve their general condition. For instance, those who seem to be badly nourished and anemic are immediately put upon some standard tonic, such as a tablet of iron, arsenious acid, and strychnine. We find that they quickly respond to the improved surroundings, good care, and treatment, by improved appetite, gain in weight, etc. We believe this puts them in a better state to receive and assimilate the remedies directed specifically to the cure of the disease. Others, again, enter with scabies, which is promptly relieved by sulphur ointment applied in the usual way. Ulcers respond kindly to appropriate treatment and heal in a few weeks. Briefly, our object is to put and maintain every patient in as good general health as possible.

Of the long list of drugs and remedies used especially against leprosy by various authorities we have nothing derogatory to state. The writers have great faith in strychnine, recommended by Dyer and Hopkins of New Orleans, as we certainly have had good results from its constant use, especially in nerve cases. Arsenious acid, gurjun oil, and several others of the old-time remedies, so far as tried, have maintained their good reputation in our hands, and we believe have done good.

The Use of Chaulmoogra Oil.

The remedy to which we pin our faith as superior to all others is chaulmoogra oil. For many years it was used in Hawaii in its crude state, with results very similar to those obtained elsewhere. To the majority of patients it is nauseating and offensive to the stomach even when taken in slowly increasing doses by capsules, and its use has to be discontinued for a time, to be begun later at a diminished dose. Given intramuscularly it is painful and slow of absorption.

Many attempts at its modification have met with more or less success according to reports from various sources, and one report which has attracted especial attention is that of Dr. Victor G. Heiser, surgeon, United States Public Health Service, director of health for the Philippine Islands, published in 1914.[3] Although the report covers but 12 cases, it is mentioned in this connection because it seems to have been the starting point of an awakened interest and especial effort in the Orient, where the treatment was tried with favorable results in various missionary hospitals in India and China. The Heiser formula is as follows:

Chaulmoogra oil	cc..	60
Camphorated oil	cc..	60
Resorcin	grams..	4

Mix and dissolve with the aid of heat on a water bath and then filter.

. It is used intramuscularly and "the injections are usually made at weekly intervals in ascending doses. The initial dose is 1 cc., and this is increased to the point of tolerance."

A review of the earlier literature covering the use of chaulmoogra oil may be found in United States Public Health Service Bulletin No. 75, January, 1916, by Surg. G. W. McCoy and Acting Asst. Surg. Harry T. Hollmann. Their summary of this review is as follows:

"Our personal experience leads us to the conclusion that most writers have reached—that the oil is helpful to many cases of leprosy, perhaps the majority.

"The hypodermic method of administration, while not free from disagreeable complications, seems to have given good results, and, in view of the nature of the disease, ought to be given a further trial.

[3] Public Health Reports, vol. 29, No. 42, p. 2761.

"We are sure that the use of chaulmoogra oil as at present practiced is not the solution of the problem of the therapeutics of leprosy."

The use of injections of mixtures containing crude chaulmoogra oil along the lines reported by Heiser had given sufficiently encouraging results to stimulate further investigation, and was continued at the Kalihi Hospital in the period following the work reported in Bulletin 75.

A mixture of the following composition was employed:

Formula No. 1.

Chaulmoogra oil	cc..	500
Olive oil	cc..	500
Camphor	grams..	5
Guaiacol	do....	10

This method of treatment was employed on many patients with generally favorable results. In most cases the oil was given by mouth as well as by the intramuscular route. The amount of oil which could be tolerated in this way varied considerably with individuals. The practice was to increase the dosage until the limit of tolerance was approximately reached. Lugol's solution, which was frequently administered, was likewise varied in doses, beginning with small amounts and gradually working the dosage up until the patient was receiving substantial quantities of iodine in this form.

This combination of intramuscular and oral administration was beneficial in the majority of cases, and in a number of them resulted in the patient's becoming apparently bacteriologically negative and being paroled from the hospital. A report covering 12 of these paroled cases is given by Hollmann.[4] In the great majority of cases which became bacteriologically negative, there has been no reappearance of the disease.

The results obtained by Heiser, and by the various members of the staff of the Leprosy Investigation Station here in Honolulu, gave one of us (A. L. D.) good reason to believe that in chaulmoogra oil there were one or more active principles which had a specific action in leprosy. It seemed clear that this active agent is much more effective when introduced into the body hypodermically or intramuscularly than when taken by mouth. Nevertheless the action of the injected mixtures of the crude oil is slow, the injections are painful, and the material is usually slowly absorbed. Further progress in the development of the treatment of leprosy by use of chaulmoogra oil appeared to depend upon chemical and clinical investigations directed to the isolation of the active principle and its more efficient application. There were, therefore, problems, both chemical and physiological, requiring the application of experimental methods. There was,

[4] Journal of Cutaneous Diseases, vol. 37, pp. 367–373.

however, the broader problem of the development of the best system of medical treatment for leprosy, which involves not only these scientific aspects of the problem, but also the most advantageous application of any other agencies likely to lead to a more rapid and complete mastery of the disease.

CHAULMOOGRA OIL DERIVATIVES.

Chaulmoogra oil is one of the few members of the group of fatty oils which are believed to have distinct physiological effects outside of their nutritive value. The fatty oils are of great physiological importance, but, heretofore, chiefly in relation to nutrition and the general metabolism of the body. In a series of papers from the Wellcome Research Laboratory, by Power and his collaborators,[5] the constitution of chaulmoogra oil and some of the closely related oils was elucidated. They discovered a new series of fatty acids represented by two members—chaulmoogric acid, $C_{18}H_{32}O_2$, and hydnocarpic acid, $C_{16}H_{28}O_2$. These acids differ from any other known fatty acids in that they rotate the plane of polarized light to a notable degree—chaulmoogric acid $[a]_D = +62.1°$ and hydnocarpic acid $[a]_D = +68°$. The studies on their constitution indicated that each of these acids contains a five-carbon-ring nucleus. Both of these acids were isolated from chaulmoogra oil derived from the seeds of *Taraktogenos kurzii*, and also from the oil of closely related species belonging to the genus Hydnocarpus. Power and his coworkers did not concern themselves with the therapeutic use of chaulmoogra oil.

It would appear possible that the distinctive action of chaulmoogra oil, as heretofore reported, may be due either to the glycerides of the unique fatty acids of chaulmoogra oil or to the presence of some other oil-soluble constituent not a glyceride. The first step in the attempt to identify the active agents would be the separating of chaulmoogra oil into fractions and the use of these fractions on groups of lepers. The separating of the glyceride mixtures which make up the various vegetable fatty oils is very difficult; the fatty acids obtained by the decomposition of the glycerides are somewhat more readily separated.

Sir Leonard Rogers, in his experiments using the intravenous injections of the sodium salts of the acids derived from chaulmoogra oil, made use of fractions, separated by Ghosh.[6] The data presented

[5] Power and Gornall, The Constituents of Chaulmoogra Seeds: Jour. Chem. Soc. LXXXV, p. 838 (1904); Power and Gornall, The Constitution of Chaulmoogric Acid: Jour. Chem. Soc. LXXXV, p. 851 (1904); Power and Barrowcliff, The Constituents of the Seeds of Hydnocarpus Wightiana and of Hydnocarpus Anthelmintica—Isolation of a Homologue of Chaulmoogric Acid: Jour. Chem. Soc. LXXXVII, p. 884 (1905); Barrowcliff and Power, The Constitution of Chaulmoogric and Hydnocarpic Acids: Jour. Chem. Soc. XCI, p. 557 (1907).

[6] Sudhamoy Ghosh, M. SC. (Cal.), D. SC. (Edin.), F. C. S. (London), Report of a Chemical Investigation of Chaulmoogra Oil in Connection with Leprosy Treatment: Indian Jour. Med. Research, IV, p. 691 (1916).

by Ghosh showed clearly that he was dealing with mixtures of fatty acids, and probably very complicated mixtures. The separation of the constituent fatty acids from the mixed product derived from the saponification of chaulmoogra oil by means of fractional crystallization is a tedious and complicated task, and Ghosh did not meet with much success.

It is quite clear from the results heretofore published that although there is a therapeutic agent (or agents) in chaulmoogra oil of marked value in leprosy, none of the attempts to isolate or identify this agent has led to conclusive results.

A recent publication of Sir Leonard Rogers[7] describes the use of "gynocardate of soda" and "morrhuate of soda." His term "morrhuate of soda" refers to the sodium soaps of the fatty acids of cod-liver oil, and he reports excellent results from the intravenous and hypodermic injections of this material. The fatty acids of cod-liver oil are of a peculiar and unusual type, although not of the chaulmoogric series. If the results of Rogers are confirmed, it will appear that the fatty acids of cod-liver oil are also useful in leprosy. Although it may be, as suggested by Rogers, that "other unsaturated fatty acids may also be expected to yield effective preparations against the acid-fast bacilli of both leprosy and tuberculosis," it seems to us unlikely that this is a property common to all unsaturated fatty acids. For example, oleic acid, which is unsaturated to the same extent as chaulmoogric acid, is a common body constituent, and it would therefore be rather improbable that weekly injections of, say, 5 cc. of a 3 per cent solution of sodium oleate, amounting to 0.15 gram dry material, would have any such effect in leprosy as has been reported following the use of even smaller quantities of the sodium soaps of the fatty acids of chaulmoogra oil. Obviously a wide and important field for chemical and physiological investigation has been opened by this work of Sir Leonard Rogers and our own work here.

As an initial step, the fatty acids of chaulmoogra oil were separated into four fractions in the chemical laboratory of the College of Hawaii. One of these fractions was chaulmoogric acid, and the other three were mixtures of acids having somewhat different properties. These fatty acid fractions are solids, and therefore unavailable directly for hypodermic or intramuscular injections. One of the first problems was to find a suitable form of material for injection which would allow rapid absorption into the circulation. It was found that the ethyl esters of the fatty acids were thin fluid oils lending themselves readily to intramuscular injections and were readily absorbed.

[7] Paper read before the Medical Section of The Asiatic Society of Bengal, Mar. 12, 1919, by Sir Leonard Rogers, M. D., F. R. C. P., F. R. C. S., Lieutenant Colonel, I. M. S.

The four fractions originally tried out, and designated, respectively, "A," "B," "C," and "D," were of the following character:

Fraction "A": The ethyl ester of chaulmoogric acid.

Fraction "B": The ethyl esters of the other fatty acids readily separating on cooling the alcoholic solution of the mixed fatty acids of chaulmoogra oil, doubtless containing considerable of "A".

Fraction "C": The ethyl esters of the fatty acids remaining in the mother liquor from the separation of the acids in "A" and "B" and yielding lead salts readily soluble in ether.

Fraction "D": Ethyl esters of the fatty acids accompanying "C" in the alcoholic separation, but yielding lead salts not readily soluble in ether.

The early results of the use of these fractions "A," "B," "C," and "D," together with some details of the methods of their preparation, are given by Hollmann and Dean.[8]

The results published and a continuation of the same lines of work lead to the general conclusion that the therapeutic agent in chaulmoogra oil is able to survive the chemical treatments involved in the making of these preparations and is itself distributed through all four of the fractions. The differences in results, using the different fractions, are not sufficient to warrant any final conclusions regarding their relative efficiency; patients receiving each of the fractions have shown marked improvement, have become bacterially negative, and have been paroled. It is impossible, however, to draw definite conclusions from this work because of the fact that all patients who received the injections also regularly received chaulmoogra oil by mouth in substantial quantities. We can not say, therefore, whether the beneficial action in any particular case is due to the material injected or to the combined action of the material injected and that taken by mouth. The general observation that chaulmoogra oil taken by mouth has a beneficial but not decisive action lends color to the belief that the most important factor in the improvement of the various cases is the injected material. As a series of experiments intended to develop the best method for leprosy treatment the plan followed was satisfactory, but it is not satisfactory as a method of demonstrating the relative efficiency of different fractions of the oil.

DISTILLED ESTERS.

As already indicated, the processes which resulted in the fractions "A," "B," "C," and "D" are of such a character as to make it improbable that any other material except fatty acids would survive them and be distributed in all four of these fractions. Still further evidence on this point was gained by a different system of fraction-

[8] Journal of Cutaneous Diseases, vol. 37, pp. 367–373.

ation. In this case the mixed fatty acids derived from the saponification of chaulmoogra oil were converted into ethyl esters by heating with absolute alcohol in the presence of dry hydrochloric acid gas, giving a mixture of the ethyl esters of all the acids present in the crude oil. This acid mixture was distilled *in vacuo* at a pressure of 30 to 34 mm. The distillate was cut into three fractions of different boiling ranges, designated "E," "F," and "G." These distilled esters are colorless liquids. At the time the first work of this character was done no apparatus was available to provide higher vacua and allow satisfactory distillations. The fractions "E," "F," and "G" were used for intramuscular injections in a number of patients, beginning in January, 1919, and in some cases extending until about the 1st of July of that year. It was found that all the cases receiving each one of the fractions "E," "F," and "G" showed improvement—some of them quite rapid—indicating that the methods employed in their production had not resulted in the destruction of the therapeutic agent or agents.

The same uncertainty surrounds the interpretation of these results as exists in the cases receiving fractions "A," "B," "C," and "D," since all were getting chaulmoogra oil in capsules three times daily in addition to the weekly injections. We can say, however, that whatever virtue resides in the use of chaulmoogra oil derivatives injected intramuscularly in combination with the oral administration, that virtue is probably not lost or segregated to an appreciable extent by any of the chemical or physical conditions to which these various preparations have been exposed.

The use of vacuum distillations as a means of separating the esters of the fatty acids and the fatty acids themselves is receiving extensive application in the chemical investigations now in progress.

THE ADMINISTRATION OF THE ETHYL ESTERS.

The intramuscular injections are given once a week, Wednesday being known as "Injection Day." An adequate supply of injection material, together with syringes, needles, etc., is previously subjected to about 15 pounds of steam pressure for from a half to one hour in the autoclave. Other methods of sterilization would doubtless answer equally as well; for instance, an ordinary kitchen double boiler ought to serve every purpose, especially when only a few patients are to be treated. The patients, instead of dreading what must be a rather painful performance, make a gala day event of it and fill the hour with laughter, noise, and chatter on the lawn outside while awaiting their turns.

The site chosen by us for the injection is the upper and outer quadrant of the gluteal region, alternating sides weekly. One of the patients, who is called the "painter," applies tincture of iodine to

a spot the size of a silver dollar. The syringe used is an ordinary 20-cc. all-glass model, and the needle selected is a No. 20, although with the thin and limpid ethyl esters a smaller size would undoubtedly serve. Sterile needles, one for each patient, are in readiness; the material is poured from the flask into a sterile beaker, a patient assistant stands on one side with a previously prepared basin of cotton pledgets, and on the other side is the clerk, usually the laboratory assistant, record book in hand, to enter opposite the name in a properly ruled, dated column the number of cubic centimeters given each patient on that day. A syringe full of the material is drawn up from the beaker, then, with a small spring forceps, a needle is picked up from the large Petri dish containing them and placed on the stem of the syringe. The patients are taught to step lively, and one by one they quickly enter from the preparation room, the needle is passed its whole length to reach the musculature, and the proposed dose is gently administered. The instant the needle is withdrawn the assistant claps a pledget of cotton over the puncture, and the patient's own hand is applied to retain it with a gentle pressure for a few minutes in the preparation room. By the time the operator has removed and discarded the used needle and replaced it by a clean one the next patient is in position. We can thus easily administer from 75 to 100 injections in an hour or two and do it well. Employing 1 cc. as the initial dose, it is our custom at every second or third injection to increase the dose by 1 cc. until we reach a maximum of from 3 to 5 cc., according to the age or weight of the patient.

A phenomenon noted by many other observers in using chaulmoogra oil injections occurs with us also; in a few instances, immediately following the injection, the patient is seized with a violent fit of coughing. It quickly begins to subside, however, and in less than five minutes has entirely disappeared, leaving no serious results.

As to effects, or so-called "reactions" following our injections, there is a considerable diversity of reports. Some claim that during the following 24 hours they experience creeping sensations of chilliness at times, that they are rather out of sorts and feverish, with an indifferent appetite, etc.; others say they do not notice any such symptoms; while all admit a soreness for a day or two, deep under the point of injection. In a few instances we have taken the morning and evening temperature of all the patients on injection day and the day following, with the result that not 3 per cent of the number showed any rise whatever, either on the evening of injection day or morning or evening of the day following. The rise of temperature in those who did show any appreciable rise did not exceed one degree; from which it may be inferred that the constitutional symptoms following our injections are practically nil.

While some have reported from other sources rather frequent abscess formation as derogatory to intramuscular injection of chaulmoogra oil, we are happy to report more favorable results, as in 4,892 deep injections administered from October 1, 1918, to the present writing (January, 1920), we have had but one case of resulting abscess.

COMBINED IODINE IN TREATMENT.

For a number of years iodine has been employed in the treatments, chiefly in the form of Lugol's solution. Since the fatty acids of chaulmoogra oil are for the most part unsaturated acids and therefore capable of adding iodine to form iodine compounds, it seemed possible to utilize this property to introduce iodine into the body either through the skin, by injection, or by way of the mouth. Iodine combined in this way has none of the irritating action of free iodine. We have been employing treatments since February, 1919, in which combined iodine has been used.

In the period between February 5 and March 12, 1919, nine newly received patients were placed in a group to receive injections of a preparation consisting of the mixed ethyl esters of chaulmoogra oil carrying 4 per cent of combined iodine. Subsequently, the percentage of iodine has been varied between 2 and 8 per cent.

In addition to the weekly injections, these patients received capsules three times per day, containing the mixed fatty acids of chaulmoogra oil carrying 5 per cent of combined iodine. The fatty acids were used instead of the oil itself because hydrolysis of the glycerides to fatty acids is the normal digestive process which precedes fat absorption. We were therefore using a predigested oil. We can see no advantage in the use of the sodium salts, as practiced by Rogers, since these soaps would be reconverted into the fatty acids by the hydrochloric acid of the stomach. Between May 14 and June 4, 1919, two additional patients were placed on this treatment. About the last of June it became necessary to ship a considerable number of patients to Molokai on account of the crowded condition at Kalihi. This unfortunately caused the loss of 4 of our 11 patients in this experiment. The remaining 7 have all been paroled. Since the cases sent to Molokai were the less promising ones, they would not have been fit for parole in November, and might, perhaps, never have become bacteriologically negative.

"STANDARD TREATMENT."

Because of the excellent progress which patients were making on the treatment just described it was decided to adopt this as the standard routine practice, placing on this treatment all patients who were received, unless they were to be in some group for special

investigation. As already indicated, we have done some shifting about with the proportions of iodine employed, and the standard treatment now consists in weekly injections of a preparation which consists of the mixed ethyl esters of the acids of chaulmoogra oil with 2 per cent of iodine in chemical combination. The amount used starts at 1 cc. and is gradually increased to a maximum of 4 or 5 cc. for adults.

Three times each day, an hour and a half after meals, the patient receives capsules containing the fatty acids of chaulmoogra oil with 2½ per cent of iodine chemically combined. The dosage for the first 15 days is $\frac{1}{6}$ gram per 100 pounds of body weight three times daily; for the second half of the first month, $\frac{1}{3}$ gram per 100 pounds; for the first half of the second month, $\frac{2}{3}$ gram per 100 pounds; and after that, 1 gram per 100 pounds of body weight. This means, for example, that a 150-pound man would get 1½ grams per dose or 4½ grams per day.

In addition to this treatment, the patients also receive such other medical care as may be indicated in each case.

TREATMENT BY INJECTIONS ONLY.

It has already been pointed out that the injection of various preparations has been accompanied by the oral administration of crude chaulmoogra oil or its derivatives. The experiences of others, as set forth in the literature of leprosy, as well as our own observations, point to the conclusion that the oil which passes through the digestive tract plays a minor part in the improvement noted. Much larger quantities are taken by the mouth than by injection; yet, when the injections are not employed, the recovery is slow, uncertain, and incomplete.

In administering treatment on a large scale, great economy of material would be effected by using injections only, and the whole treatment simplified. In order to test the efficacy of the injection feature of our standard treatment without the feature of oral administration of the iodized fatty acids, a group of 10 patients who had recently been admitted to the hospital, and had never received more than very small amounts of chaulmoogra oil, were placed on treatment by injection only. A small dosage of strychnine was given, partly for its tonic effect and partly for the psychological value of having "something to take," like the others. It is too soon to draw final conclusions, but the results to date are very encouraging. Perhaps these patients are not improving quite as rapidly as those on the regular treatment, but they are certainly improving.

ACCESSORY TREATMENTS.

Although experience indicates that the chief factor in the good results we have attained is the intramuscular use of chaulmoogra derivatives, aided by those taken orally, it is nevertheless advantageous to make use of any adjuvant measures which have proved of value. It has been shown that aqueous solutions do not penetrate the sound skin, whereas oily ones enter to greater or less depths.

Iodine liniment.—We have tried the superficial application of a "green oil" consisting of the ethyl esters of chaulmoogra oil, carrying combined iodine amounting to from 10 to 25 per cent by weight. This oil penetrates well, especially when aided by brisk massage. Definite and convincing data covering its value are not available, but it is in considerable demand by the patients, who are given 50 cc. vials and allowed to apply the oil three times daily.

Ointments.—For old and sluggish ulcers as well as for chronic eczematous looking spots and areas which need stimulating, we employ the ointment of ammoniated mercury of the United States Pharmacopœia, which we modify by mixing it with ointment of zinc oxide in equal parts when we desire to render it milder, or, on the other hand, if we have a lesion which requires something stronger, we rub into our ointment of ammoniated mercury a dash of finely powdered salicylic acid, much or little, as the appearance of the lesion seems to indicate. Patients coming in with open sores or ulcers are expected to have them all healed in a few weeks' time, and they seldom disappoint us.

Trichloracetic acid.—While we never use the actual cautery as employed by Unna, we have had excellent results from painting nodules with pure trichloracetic acid, which immediately produces a considerable escharotic action; the skin turns white and there is more or less smarting and burning for a few moments. By the time the effects of the acid treatment have passed off, usually one or two weeks, the nodule is a little softer and a little smaller and the patient is anxious for another application. There is one serious drawback to the use of the acid, noticed also in the case of carbon dioxide snow used here some years ago, and that is its interference with the pigmentation of the part to which it is applied. In some cases the skin is hyperpigmented and in others, hypopigmented. The former is illustrated in the case of a young woman still with us who over a year ago had decided thickenings over each malar region. Several applications entirely cleared up the infiltrations on the cheeks, but, unfortunately, left two unsightly areas, each the size of a silver dollar, almost entirely black. After several weeks, however, they began to fade and now, after many months, they are barely visible. On the other hand, a young man, paroled over a year ago, the lobes

of whose ears were similarly treated, has a distinct loss of pigment and it shows no sign of returning.

Nodular injections.—We have been cautiously trying the injection of material which we have employed intramuscularly directly into the leprous nodules. Of course, it is understood that this and the preceding methods are applicable only when the nodules are few; for instance, we have a few patients whose stay with us has been prolonged by the lingering nodular enlargement of the lobe of one or both ears, their other lesions having disappeared. With aseptic precaution, we slowly instil a very few drops in various parts of the nodule, employing for the purpose an ordinary all-glass hypodermic syringe with the same technique as in our intramuscular injections; that is, slipping on a clean sterile needle for each injection. It is evidently rather painful and is followed usually by a considerable swelling which soon subsides, however, leaving the nodule appreciably softer and smaller. We think better progress is being made by the injections than by the external application of the trichloracetic acid. Both are good and each has its use. For a very superficial, hard, nodular area the acid is preferable.

Heliotherapy.—Another accessory treatment used, rather crudely, however, at this hospital, is heliotherapy, or the employment of sun baths. We have had some remarkable cures of ulcerations, including the plantar pedis variety, in presenting them to the direct rays of the sun, but whether it is a case of *post hoc* or *propter hoc*, it is not easy to say. A patient enters the hospital and is found to have an ulcer as large as a silver dollar on the sole of one foot, extending nearly or quite to the bones. He has been a laboring man, on his feet nearly the whole of every day. We discover it only by inspection, for he does not betray its presence by the slightest limp in his walk, for the foot is absolutely anesthetic. He is slightly anemic and is put upon our ferruginous tonic; he is put upon our standard treatment of injections and capsules; he is handed a pair of crutches and absolutely forbidden to put a pound of weight on the foot affected or touch it to the ground in moving about. He gets his ulcer washed out every day with a permanganate solution. He gets three good meals a day, a good clean bed to sleep in by night, and all the rest and relaxation he desires by day. That ulcer begins at once to heal, sun bath or no sun bath. The sun-bath measure, however, is very popular with our patients. They have more faith in it, perhaps, than has their medical attendant; but no matter, sunshine is abundant and inexpensive, and as yet untouched by the high cost of living. The one great thing is that the ulcers fill and close. The above is not a fanciful picture, but one of constant occurrence with us; and we are ready to admit that heliotherapy is a therapeutic aid of no inconsiderable value. In cases of rebellious plantar ulcers, however, espe-

cially with necrotic tissues, nothing approaches in efficacy the operation of Goodhue of Molokai in thorough ablation of the affected parts and allowing the wound to heal by granulation.

NEURAL LEPROSY.

Cases of leprosy of the nerve type are likely to be ignored at institutions so far as treatment is concerned, and attention is likely to be concentrated on nodular cases.

In view of our success during the past year with several instances of the neural type of leprosy, the conviction has forced itself upon us that it is highly important that all these cases should be brought in and subjected to the regular routine treatment for a course of several months at least, especially in the case of children or even of adults of more recent attack. We believe our remedies arrest the disease and prevent further destruction of hands and fingers, even when, as in long-standing cases, normal function can not be fully restored.

But during the past year we have done better than simply arrest the destructive process; we have had the great satisfaction of seeing marked improvement in a considerable number of these purely neural cases, and apparently a complete recovery in others. One young man who came in with a decidedly ataxic gait, unable to raise his body on his toes and with one hand so weak and deformed that he had been compelled to abandon the use of the typewriter a year before entering, so far improved before his parole that his disability in walking had not only disappeared but he became one of the leading tennis players and one of the swiftest runners in the compound. He has now returned to full and efficient clerical duty in an office. A woman with all fingers absorbed to less than half their original length, after a year's treatment, became able to write, to sew and knit, and to execute many movements and functions of which she had for years been deprived. We have had several cases of young men and boys who, on entering, were absolutely unable to button or unbutton their clothing and were compelled to accept the assistance of their fellow patients, but who, after a few months' treatment, became entirely independent and self-reliant in that respect. We have some young women and girls who entered with little and ring fingers partially crooked, who are now able voluntarily to straighten them after many months of inability to do so.

GENERAL RESULTS.

The number of patients during the period from October 1, 1918, to December 31, 1919, were as follows:

Number of patients, October 1, 1918	52
New patients received	134
Total number of cases	186

Deaths	5
Transferred to Molokai	60
Sent to Orient	1
Paroled	48
Total deaths and departures	114
Number of patients, December 31, 1919	72

It will be noted that a little over 25 per cent of all patients who have been in the hospital in the period under review were paroled as apparently clinically and bacteriologically free from the disease, and of the total departures, 42 per cent were by the parole route. Many of those sent to Molokai were not sent because we regarded them as hopeless cases, but because the hospital was overcrowded.

CONCLUSIONS.

The following conclusions may be drawn from our recent experience in the treatment of leprosy:

1. The intramuscular injection of the ethyl esters of the fatty acids of chaulmoogra oil usually leads to a rapid improvement in the clinical symptoms of leprosy. In many cases the lesions disappear, except for scars and permanent injuries, and the leprosy bacillus can no longer be demonstrated.

2. When combined with iodine, the fatty acids of chaulmoogra oil and their esters give good results; but there is no adequate experimental proof that this addition of iodine causes any increase in the effectiveness of the materials used.

3. All of the available evidence obtained from the use of fractions of the fatty acids of chaulmoogra oil indicates that the therapeutic action is due to one or more of the fatty acids of the oil or to some as yet unidentified substance associated therewith. The various methods of fractionation heretofore employed have failed to demonstrate the active agent.

4. Although conclusive evidence is not at hand, it is probable that the oral administration of chaulmoogra oil derivatives is of minor importance compared with the injections.

5. In treating leprosy, it is important to make use of all auxiliary agencies to build up and maintain bodily vigor.

6. Hypodermic injections of the ethyl esters into leprous nodules are followed by marked swelling with ultimate recession of the lesions. This is a valuable auxiliary treatment for especially resistant lesions.

Summary.

It has been sufficiently established that chaulmoogra oil contains one or more agents which exert a marked therapeutic action in many cases of leprosy. We can not say as yet that the disease is

cured, since we have no test adequate to establish such a verdict. Whether or not the apparent cures are real and permanent, it is evident that we have a valuable agent at our disposal in the control of the disease.

ON THE POSSIBILITIES OF USING MOSQUITO TRAPS IN ANTIMALARIA WORK.

By C. W. METZ, Carnegie Institution of Washington, Collaborating Biologist, United States Public Health Service.

It appears to the writer that the eradication or control of malaria in the United States is rapidly becoming, if it has not already become, essentially a rural problem, centering around the relatively isolated farmhouse. Here the operations of draining and oiling that are practicable and efficient in urban districts can not be applied on any adequate scale under present economic conditions. Screening is likewise subject to grave practical disadvantages as a wholesale measure, partly because the effective use of screens would necessitate as a prerequisite the rebuilding of a good proportion of the houses to be protected. On the other hand, if elimination of malaria be attempted through treatment of the human host, equal practical difficulties are encountered. To what, then, can we look for any hopeful line of attack on this problem?

One possibility suggests itself when one considers the fact that the focal point of the danger is the farmhouse itself. It seems safe to say that the malaria plasmodia are transmitted from man to mosquito and from mosquito to man mainly indoors or about the house. This means that, in general, the only dangerous mosquitoes are those in or near dwellings. Consequently, if some method could be devised for eradicating or materially reducing the number of these it ought to prove an effective agent in lessening malaria transmission.

Obviously the simplest manner of doing this would be by means of traps or poison, provided they were effective. In all probability both have been tried many times in the past, for the method is too simple and easy not to have received attention from tormented sufferers or others; but the fact remains that no practical exterminator has resulted. This may be because the habits of Anopheles are not such as to make them sufficiently susceptible to baits or traps, or it may be because the subject has not received adequate consideration. I venture to believe the latter, or at least to believe that the matter merits further attention and study, especially from the viewpoint of the biology of the mosquito.

With these features in mind a few preliminary observations and experiments were undertaken in 1918, but they were discontinued

early in 1919 and I have been unable to resume them since. Although they merely scratched the surface of the problem, they gave certain results that seem to be of sufficient interest to warrant publication in the hope that others may test their possibilities further.

The observations were concerned primarily with determining what things, if any, served to attract adult Anopheles ("things" being meant to include anything, animate or inanimate, that seemed practicable). Observations were not carried on very extensively for they soon led to experiments that absorbed attention up to the time the work was discontinued, and only the latter need be considered here. The experiments were confined to the question of traps and bait, rather than to poison, since the primary object at first was to ascertain what would attract the mosquitoes. The various fruitless experiments need not be reviewed, and attention will be confined here to one aspect of the work.

It has been observed in connection with other experiments that Anopheles are strongly attracted by pigs, and with this fact as a starting point experiments were undertaken in the hope that use could be made either of the pigs themselves or of some artificial substitute that would prove equally attractive. The experiments were relatively crude and not extensive, but the results are at least suggestive of further possibilities.

Without going into details, it may be stated briefly that traps of various sorts were constructed in which live pigs were kept. These were, essentially, small pig-pens. After various trials the type represented in the accompanying photographs was found to combine the essential features (for experimental purposes), namely, sufficient stability to prevent destruction by the pig, a satisfactory apparatus for facilitating the entrance but preventing the escape of the mosquitoes, and a practicable size and weight.[1]

The record of two of these traps may be outlined in detail. They were set up at the Coronet Phosphate Mines, near Plant City, Fla. Owing to the enlightened management of the company operating these mines, there was little or no malaria there, but the locality had many advantages for experimental work. Not the least of these was owing to the hearty cooperation of Mr. Greene, the manager of the plant, to whom I am deeply indebted for the many facilities placed at my disposal and for the actual construction of much of the apparatus used.

The source of Anopheles was a cypress swamp near the plant. This was not a prolific breeding place, but it served to supply Ano-

[1] These traps were about 3 feet wide, 3 feet high, and 5 feet long, with no floor, a small door in one end and an entrance way for the mosquitoes along both sides and the rear. The latter was made of screen, the width being about 8 inches at the outside and tapering to a slit about 1 inch wide through which the mosquitoes entered the cage.

pheles in fair numbers to the dwellings and outbuildings around the plant. Before the traps were installed it was an easy matter to catch from four or five to a dozen or more Anopheles in practically any privy near the swamp. The traps were placed somewhat less than a quarter of a mile apart—one near the swamp, the other away from it. The weather was for the most part warm, so that the mosquitoes were usually flying about and biting freely, although it was the winter season, when they were least numerous.[2]

The results are indicated by the following extracts from my notebook. Trap No. 1 was an old and inferior type of trap, located near the swamp; No. 2 was the type represented in the accompanying photographs; and No. 3 was the same type, used to replace No. 1. After each count the mosquitoes were killed or removed from the traps.

January 25, 1919. Traps exposed five days; weather mild.
Nos. 1 and 2 combined: 40 Anopheles (both crucians and quadrimaculatus).[3]
January 29. Weather mild.
No. 1: 32 Anopheles (both species).[4]
No. 2: 13 Anopheles (both species).
45 (total)
February 1. Weather mild; nights of January 29 and 30 cool.
No. 1: 24 Anopheles (both species).
No. 2: 17 Anopheles (both species).
41 (total)
Examination of four privies near the traps revealed a total of only five Anopheles.
February 7. After five days of almost steady rain.
No. 1: 17 Anopheles (both species).
No. 2: 30 Anopheles (both species).
47 (total)
Examination of four privies and underneath one house (the best places near the traps) revealed only two Anopheles.
February 11. After three days of cold weather.
No. 1: Pigs had escaped; no Anopheles.
No. 2: 3 Anopheles.
February 14. After heavy rain, weather warm.
No. 1: No pigs.
No. 2: 8 Anopheles, 2 Culex.
Nearby privy, 3 Anopheles.
February 25. (After absence to Wilmington conference). Weather warm. Mr. Le Prince present.
No. 3: 24 Anopheles (both species).
No. 2: 52 Anopheles (both species).
76 (total)
Two privies near by contained only one Anopheles.

---

[2] In this region (30 miles east of Tampa) Anopheles are active and apparently bite freely at all seasons.
[3] No Anopheles punctipennis were found in this region and they probably do not occur here.
[4] The exact proportions of the two species was not determined, for it was not always possible to identify the species before the specimen was killed. Apparently the attraction of the traps was equally effective on both species.

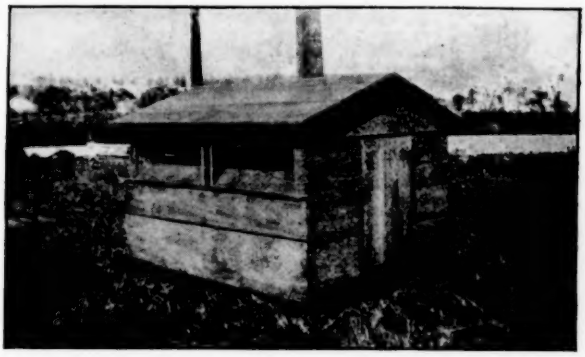

Fig. 1.—Front view of pigpen mosquito trap. When in use, the sides of the trap were banked with dirt to close the openings at the bottom.

Fig. 2.—Rear view of the same type of trap, showing the entrance-way for the mosquitoes along the side and end.

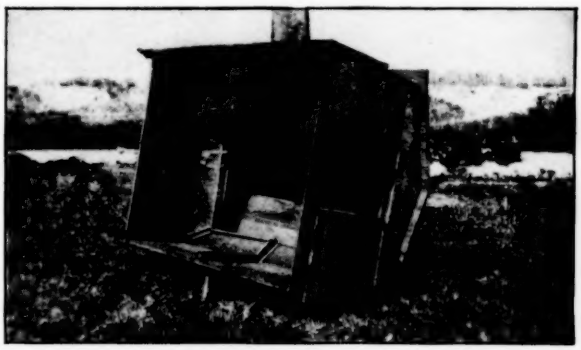

Fig. 3.—Trap turned on its side to show the interior. Note the trough-like entrance-way with the narrow opening through which the mosquitoes enter.

Superficial examination of the building around the plant during the course of these experiments indicated pretty clearly that Anopheles were becoming more and more scarce in them, and it seems safe to say that while the traps were both in operation most of the Anopheles in the immediate neighborhood at any one time were in the traps.

Meager as these data are, they serve to demonstrate two things: First, that Anopheles react sufficiently to some stimuli to be enticed into traps, and, second, that under the conditions of the present experiment the use of traps served to keep near-by buildings practically free from Anopheles. One dwelling was included in this area, and it seemed to be as free from Anopheles as the privies and other buildings.

Numerous defects are evident in this particular type of trap or any trap involving the use of live animals that would have to be cared for,[5] and it is not suggested that such a trap provides any solution of the problem. On the other hand, if, for instance, a chemical substance could be substituted for the pig, the way would seem to be opened for the perfection of an effective trap. Once the practicable attractive agent were discovered, ingenuity would soon evolve an inexpensive and convenient (as well as "fool-proof") type of trap or else an effective poison.

Numerous attempts were made to secure such an attracting substance. A great many chemicals and compounds were tried, including the fatty acids, caproic, butyric, and propionic, but much of the early work was done with traps that probably would not have been suitable even if the bait had proved attractive. This fact, together with the brevity of the experiments, makes it seem best not to prejudice the case against any of the things used by enumerating them.

The problem, I believe, merits careful attention from the biologist and biochemist, and I commend it to any who have the opportunity to conduct such an investigation. It does not seem ultravisionary to imagine that careful study of the sensory reactions of Anopheles, combined with chemical analyses and experiments, would suffice to detect the particular stimuli to which Anopheles respond, and to synthesize substances that would produce these stimuli satisfactorily for the purpose. In making this statement I am fully aware of the idiosyncrasies of Anopheles, the differences between the habits of the respective species, and the influence of different environments on anopheline reactions, all of which present difficulties—but not, I believe, insuperable ones.

[5] Lacking any better method, however, it might be suggested that a type of pigpen trap suitable for use in special cases could be constructed with a swinging door, hinged at the top, through which the pigs could pass in and out at will. The Anopheles, after having fed, seem content to remain in the traps and apparently make little effort to escape through cracks, etc., especially if these are down near the ground.

DEATHS DURING WEEK ENDED AUG. 7, 1920.

[From the "Weekly Health Index," Aug. 10, 1920, issued by the Bureau of the Census, Department of Commerce.]

Deaths from all causes in certain large cities of the United States during the week ended Aug. 7, 1920, infant mortality (per cent), annual death rate, and comparison with corresponding week of preceding years.

City.	Population Jan. 1, 1920, subject to revision.	Week ended Aug. 7, 1920.		Average annual death rate per 1,000.[2]	Per cent of deaths under 1 year.	
		Total deaths.	Death rate.[1]		Week ended Aug. 7, 1920.	Previous year or years.[2]
Akron, Ohio	208,435	35	8.8	[3] 11.2	17.1	[3] 11.9
Albany, N. Y	113,344	27	12.4	C 18.0	14.8	C 15.4
Atlanta, Ga	200,616	58	15.1	C 16.3	20.7	C 11.3
Baltimore, Md	733,826	211	15.0	A 18.5	36.0	A 26.7
Birmingham, Ala	178,270	47	13.7	A 17.9	14.9	A 17.4
Boston, Mass	747,923	152	10.6	A 14.2	19.7	A 22.2
Bridgeport, Conn	143,152	19	6.9	.....	36.8	.....
Buffalo, N. Y	505,875	107	11.0	C 12.3	15.9	C 25.4
Cambridge, Mass	109,456	22	10.5	A 13.6	13.6	A 21.7
Chicago, Ill	2,701,212	518	10.0	A 15.6	20.8	A 23.0
Cincinnati, Ohio	401,158	107	13.9	C 12.4	9.3	C 17.9
Cleveland, Ohio	796,836	139	9.1	C 9.1	17.3	C 42.3
Columbus, Ohio	237,031	56	12.3	C 11.8	7.1	C 17.0
Dayton, Ohio	153,830	25	8.5	C 9.6	16.0	C 14.3
Denver, Colo	256,369	59	12.0	A 10.4	10.2	.....
Detroit, Mich	993,739	181	9.5	.....	17.7	.....
Fall River, Mass	120,485	31	13.4	C 10.4	32.3	C 45.8
Grand Rapids, Mich	137,634	18	6.9	C 5.4	22.2	C 21.4
Hartford, Conn	138,036	41	15.5	.....	29.3	.....
Indianapolis, Ind	314,194	71	11.8	C 11.8	12.7	C 12.9
Kansas City, Kans	101,078	24	12.4	.....	29.2	.....
Kansas City, Mo	[4] 313,785	75	12.5	C 11.8	9.3	C 9.9
Los Angeles, Calif	575,480	146	13.2	A 12.2	13.7	A 11.4
Louisville, Ky	234,891	44	9.8	C 11.1	22.7	C 6.0
Lowell, Mass	112,479	30	13.9	A 19.0	26.7	A 35.8
Memphis, Tenn	162,351	53	17.0	C 15.9	15.1	C 22.4
Milwaukee, Wis	457,147	80	9.1	A 9.8	22.5	A 21.5
Minneapolis, Minn	380,498	76	10.4	C 10.3	19.7	C 13.5
Nashville, Tenn	118,342	30	13.2	C 14.6	33.3	C 21.2
Newark, N. J	414,216	84	10.6	C 10.0	10.7	C 19.0
New Bedford, Mass	121,217	33	14.2	A 15.7	51.5	A 48.5
New Haven, Conn	162,390	49	15.7	C 7.5	24.5	C 8.7
New Orleans, La	387,219	103	13.9	A 18.6	9.7	A 14.8
New York, N. Y	5,621,151	1,080	10.0	C 10.2	22.6	C 19.9
Norfolk, Va	115,777	28	12.6	.....	21.4	.....
Oakland, Calif	216,361	29	7.0	A 9.5	24.1	A 12.3
Omaha, Nebr	191,601	21	5.7	C 8.5	38.1	C 16.1
Philadelphia, Pa	1,823,158	392	11.2	[3] 17.1	17.6	[3] 23.8
Pittsburgh, Pa	588,193	143	12.7	C 13.0	30.1	C 25.3
Portland, Oreg	258,288	49	9.9	C 10.6	16.3	C 9.6
Providence, R. I	[4] 263,613	46	9.1	C 6.7	23.9	C 20.6
Richmond, Va	[4] 160,719	61	19.8	C 15.6	19.7	C 12.5
Rochester, N. Y	295,850	62	10.9	C 9.8	21.0	C 14.5
St. Louis, Mo	772,897	170	11.5	C 10.7	19.4	C 5.1
St. Paul, Minn	234,595	43	9.6	C 9.2	20.9	C 12.2
San Francisco, Calif	508,410	118	12.1	C 11.6	7.6	C 8.9
Seattle, Wash	315,652	51	8.4	A 7.8	7.8	A 11.0
Spokane, Wash	104,204	21	10.5	C 5.5	4.8	C 18.2
Springfield, Mass	129,338	23	9.3	.....	26.1	.....
Syracuse, N. Y	171,647	41	12.5	C 12.9	22.0	C 16.7
Toledo, Ohio	243,109	50	10.7	A 14.0	16.0	A 17.1
Trenton, N. J	119,289	48	21.0	A 21.6	18.8	A 26.9
Washington, D. C	437,571	103	12.3	A 13.6	21.4	A 17.0
Worcester, Mass	179,754	31	9.0	C 11.4	3.2	C 23.1
Yonkers, N. Y	100,226	16	8.3	.....	18.8	.....
Youngstown, Ohio	132,358	30	11.8	.....	36.7	.....

[1] Annual rates per 1,000 population.

[2] "A" indicates data for the corresponding week of the years 1913 to 1917, inclusive. "C" indicates data for the corresponding week of the year 1919.

[3] Data are based on statistics of 1915, 1916, and 1917.

[4] Population estimated as of July 1, 1918.

Summary of information received by telegraph from industrial insurance companies for week ended Aug. 7, 1920.

Policies in force	24,500,273
Number of death claims	3,568
Death claims per 1,000 policies in force, annual rate	7.6

PREVALENCE OF DISEASE.

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring.

UNITED STATES.

CURRENT STATE SUMMARIES.

Telegraphic Reports for Week Ended Aug. 14, 1920.

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers.

ALABAMA.	Cases.
Diphtheria	15
Hookworm	3
Malaria	18
Measles	3
Scarlet fever	9
Smallpox	6
Tuberculosis (pulmonary)	11
Typhoid fever	66

ARKANSAS.	
Chicken pox	2
Diphtheria	7
Hookworm	9
Influenza	2
Malaria	302
Measles	7
Pellagra	14
Scarlet fever	13
Smallpox	3
Trachoma	5
Tuberculosis	28
Typhoid fever	42
Whooping cough	47

CALIFORNIA.	
Cerebrospinal meningitis:	
Long Beach	1
Los Angeles	1
Oakland	1
Hookworm	1
Leprosy—Los Angeles	1
Lethargic encephalitis—Los Angeles	1
Poliomyelitis:	
Los Angeles	1
Pomona	1
Vallejo	1
Smallpox:	
Hemet	11
Scattering	30
Typhoid fever:	
Los Angeles	14
Scattering	27

DELAWARE.	Cases.
Diphtheria	3
Malaria	1
Measles	4
Scarlet fever	5
Typhoid fever	2
Whooping cough	1

FLORIDA.	
Diphtheria	5
Influenza	18
Malaria	31
Pneumonia	16
Scarlet fever	1
Typhoid fever	15

GEORGIA.	
Conjunctivitis (acute infectious)	2
Diphtheria	16
Dysentery (bacillary)	9
Hookworm	30
Influenza	15
Malaria	244
Measles	6
Mumps	1
Paratyphoid fever	1
Pneumonia	2
Scarlet fever	3
Septic sore throat	2
Smallpox	3
Tuberculosis (pulmonary)	10
Typhoid fever	53
Whooping cough	13

ILLINOIS.	
Cerebrospinal meningitis:	
Jackson County—Levan Township	1
Trenton	1
Diphtheria:	
Chicago	97
Scattering	31
Influenza	5
Pneumonia	48

ILLINOIS—Continued.	Cases.
Poliomyelitis:	
Brookfield	1
Chicago	4
Scarlet fever:	
Chicago	24
Scattering	12
Smallpox:	
Freeport	7
Scattering	14
Typhoid fever	18

INDIANA.

Cerebrospinal meningitis:	
Grant County	1
Orange County	1
Measles	9
Scarlet fever	41
Smallpox	43
Typhoid fever	19

IOWA.

Cerebrospinal meningitis—Bedford	1
Chicken pox	3
Diphtheria	28
Measles	34
Pneumonia	2
Scarlet fever	10
Smallpox:	
Doon	7
Scattering	16
Tuberculosis (pulmonary)	7
Typhoid fever	8
Whooping cough	35

KANSAS.

Chicken pox	4
Diphtheria	15
Dysentery (bacillary)	1
German measles	1
Influenza	1
Malaria	1
Measles	12
Mumps	4
Ophthalmia neonatorum	1
Pneumonia	2
Scarlet fever	30
Smallpox	28
Trachoma	4
Tuberculosis	37
Typhoid fever	38

LOUISIANA.

Anthrax	3
Diphtheria	5
Malaria	139
Measles	7
Scarlet fever	7
Smallpox	12
Tuberculosis	18
Typhoid fever	52
Whooping cough	8

MAINE.

Chicken pox	3
Diphtheria	12
German measles	5

MAINE—Continued.	Cases.
Measles	24
Mumps	11
Pneumonia	2
Scarlet fever	3
Septic sore throat	2
Smallpox	2
Tuberculosis	31
Typhoid fever	9
Whooping cough	12

MARYLAND.[1]

Cerebrospinal meningitis	2
Chicken pox	4
Diphtheria	18
Dysentery	22
Lethargic encephalitis	3
Malaria	3
Measles	13
Mumps	2
Ophthalmia neonatorum	2
Paratyphoid fever	1
Pneumonia	16
Poliomyelitis	1
Scarlet fever	13
Smallpox	1
Tuberculosis	108
Typhoid fever	28
Whooping cough	40

MASSACHUSETTS.

Cerebrospinal meningitis	1
Chicken pox	18
Conjunctivitis (suppurative)	10
Diphtheria	90
Dysentery	1
German measles	5
Influenza	4
Malaria	3
Measles	127
Mumps	22
Ophthalmia neonatorum	38
Pneumonia (lobar)	16
Poliomyelitis	16
Scarlet fever	57
Tetanus	2
Trachoma	3
Tuberculosis (all forms)	169
Typhoid fever	25
Whooping cough	144

MINNESOTA.

Smallpox	5

MISSISSIPPI.

Cerebrospinal meningitis	1
Diphtheria	7
Influenza	1
Scarlet fever	13
Smallpox	12
Typhoid fever	41

MONTANA.

Scarlet fever	10
Smallpox	8
Typhoid fever	6

[1] Week ended Friday.

NEBRASKA.	Cases.
Cerebrospinal meningitis—Wahoo	1
Chicken pox	1
Diphtheria	8
Measles:	
Knox County	11
Saunders County	42
Scattering	7
Mumps	2
Poliomyelitis—Norfolk	1
Scarlet fever	5
Smallpox:	
Scotts Bluff	7
Scattering	23
Tuberculosis	1
Typhoid fever	7
Whooping cough	5

NEW JERSEY.	
Pneumonia	17
Smallpox—Rutherford.	

NEW MEXICO.	
Diphtheria	7
Malaria	8
Scarlet fever	2
Tuberculosis	114
Typhoid fever	7
Whooping cough	20

NEW YORK. (Exclusive of New York City.)	
Cerebrospinal meningitis:	
Mount Vernon	1
Port Chester	1
Diphtheria	106
Influenza	2
Measles	285
Ophthalmia neonatorum	1
Pneumonia (all forms)	67
Poliomyelitis:	
Millerton	1
Attica	1
Scarlet fever	66
Smallpox	2
Trachoma	2
Typhoid fever	40
Whooping cough	284

NORTH CAROLINA.	
Cerebrospinal meningitis	1
Chicken pox	7
Diphtheria	30
German measles	1
Measles	29
Scarlet fever	31
Septic sore throat	5
Smallpox	23
Typhoid fever	96
Whooping cough	165

SOUTH DAKOTA.	
Anthrax	1
Chicken pox	1
Diphtheria	10
Measles	8
Scarlet fever	4
Smallpox	2
Trachoma	1
Tuberculosis	4
Typhoid fever	3
Whooping cough	2

TEXAS.	
Diphtheria:	
Marfa	15
Scattering	6
Dysentery	2
Malaria	31
Measles	11
Paratyphoid fever	11
Pellagra	4
Plague (bubonic):	
Galveston	1
Beaumont	1
Pneumonia	4
Poliomyelitis—Edgewood	1
Scarlet fever	7
Smallpox	18
Tuberculosis	25
Typhoid fever:	
Dallas	10
Scattering	5
Typhus fever—El Paso	1
Whooping cough	39

VIRGINIA.	
Smallpox—Tazewell County	1

WASHINGTON.	
Chicken pox	6
Diphtheria	7
Measles	10
Mumps	4
Scarlet fever	4
Smallpox	48
Tuberculosis	2
Typhoid fever	7
Whooping cough	12

WEST VIRGINIA.	
Diphtheria	7
Measles	7
Scarlet fever	7
Smallpox	2
Typhoid fever	4

WISCONSIN.	
Milwaukee:	
Cerebrospinal meningitis	1
Chicken pox	6
Diphtheria	20
Measles	3
Scarlet fever	11
Smallpox	12
Tuberculosis	15
Typhoid fever	1
Whooping cough	28
Scattering:	
Cerebrospinal meningitis	1
Chicken pox	12
Diphtheria	12
Measles	71
Poliomyelitis	4
Scarlet fever	35
Smallpox	38
Tuberculosis	12
Typhoid fever	5
Whooping cough	73

Kentucky Report for Week Ended Aug. 7, 1920.

	Cases.		Cases.
Chicken pox	4	Septic sore throat	1
Diphtheria	13	Smallpox	19
Dysentery	8	Tonsillitis	2
Influenza	5	Trachoma	6
Malaria	2	Tuberculosis	36
Measles	7	Typhoid fever	36
Pneumonia	5	Whooping cough	23
Scarlet fever	14		

Summary of Cases Reported Monthly by States.

Tables showing by counties the reported cases of cerebrospinal meningitis, influenza, malaria, pellagra, poliomyelitis, smallpox, and typhoid fever are published under the names of these diseases. (See names of these and other diseases in the table of contents.)

The following monthly State reports include only those which were received during the current week. These reports appear each week as received.

State.	Cerebrospinal meningitis.	Diphtheria.	Influenza.	Malaria.	Measles.	Pellagra.	Poliomyelitis.	Scarlet fever.	Smallpox.	Typhoid fever.
1920.										
Alabama (July)	.....	33	.....	149	53	13	2	57	75	182
Arizona (July)	.....	2	1	.....	22	.....	.....	1	3	31
Colorado (June)	.....	41	.....	.....	621	.....	1	101	238	18
District of Columbia (June)	.....	34	.....	.....	71	.....	.....	50	13	7
District of Columbia (July)	.....	18	.....	.....	50	.....	.....	23	10	14
Maryland (July)	2	92	10	13	309	.....	2	43	8	98
Massachusetts (July)	14	471	13	14	2,095	4	17	339	4	104
Nebraska (July)	1	15	.....	.....	39	.....	.....	11	112	6
North Carolina (July)	3	57	.....	.....	221	.....	4	42	155	393
Rhode Island (June)	.....	67	1	.....	303	.....	.....	58	.....	6

ACTINOMYCOSIS.

Massachusetts—July, 1920.

During the month of July, 1920, one case of actinomycosis was reported in Massachusetts.

CEREBROSPINAL MENINGITIS.

State Reports for July, 1920.

Place.	New cases reported.	Place.	New cases reported.
Maryland:		**Massachusetts—Continued.**	
Baltimore County—		Norfolk County—	
Fullerton	1	Bellingham (town)	1
Charles County—		Plymouth County—	
Cross Road	1	Plymouth (town)	2
Total	2	Suffolk County—	
Massachusetts:		Boston	4
Bristol County—		Revere	1
Fall River	1	Total	14
Taunton	1	**Nebraska:**	
Essex County—		Nuckolls County	1
Lawrence	1	**North Carolina:**	
Hampden County—		Currituck County	1
Springfield	1	Gaston County	1
Middlesex County—		Pitt County	1
Lowell	1	Total	3
Malden	1		

CEREBROSPINAL MENINGITIS—Continued.

City Reports for Week Ended July 31, 1920.

The column headed "Average cases" gives the average number of cases reported during the corresponding week of previous years for which data are available. The years used are 1915 to 1919, inclusive, but in many instances the information is not available for the full five years. In these cases the average includes from one to four years.

Place.	Average cases.	1920		Place.	Average cases.	1920	
		Cases.	Deaths.			Cases.	Deaths.
Arkansas:				Missouri:			
North Little Rock	0	1	1	Kansas City	(1)	.....	1
California:				Montana:			
Los Angeles	(1)	1	1	Anaconda	.....	1	.....
Riverside	0	.....	1	New Jersey:			
San Francisco	(1)	1	.....	East Orange	0	1	.....
Santa Cruz	.....	1	1	Newark	(1)	1	2
Connecticut:				Passaic	0	1	1
New Britain	(1)	1	1	New York:			
Illinois:				New York	4	4	1
Chicago	3	1	3	Pennsylvania:			
Kentucky:				Pittsburgh	(1)	1	.....
Louisville	(1)	1	.....	Rhode Island:			
Maryland:				Providence	(1)	1	.....
Baltimore	(1)	1	.....	Texas:			
Massachusetts:				Dallas	0	.....	1
Boston	(1)	2	1	Wisconsin:			
Lowell	0	2	.....	Milwaukee	2	1	1
Malden	0	1	.....				
Michigan:							
Detroit	1	2	1				

[1] Average less than 1.

DIPHTHERIA.

See Telegraphic weekly reports from States, p. 1979; Monthly summaries by States, p. 1982; and Weekly reports from cities, p. 1995.

INFLUENZA.

Maryland Report for July, 1920.

Place.	New cases reported.	Place.	New cases reported.
Baltimore	2	Prince Georges County:	
Allegany County:		Branchville	1
Cumberland	2	Total	10
Baltimore County:			
Catonsville	4		
Calvert County:			
Owings, R. D	1		

City Reports for Week Ended July 31, 1920.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Alabama:			New York:		
Birmingham	.....	1	Jamestown	2	.....
Massachusetts:			New York	1	6
Boston	5	.....	Ohio:		
Lowell	1	1	Cleveland	.....	1
Missouri:			Columbus	.....	1
Kansas City	1	1	Pennsylvania:		
New Jersey:			Philadelphia	1	.....
Jersey City	1	.....			
Newark	1	.....			

LETHARGIC ENCEPHALITIS.

Maryland and Oregon—July, 1920.

During the month of July, 1920, five cases of lethargic encephalitis were reported in Maryland. During the week ended July 31, 1920, one case was reported at Portland, Oreg.

MALARIA.

State Reports for July, 1920.

Place.	New cases reported.
Alabama:	
Barbour County	1
Butler County	2
Colbert County	8
Crenshaw County	3
Etowah County	3
Henry County	1
Houston County	14
Jefferson County	6
Lauderdale County	2
Lowndes County	16
Madison County	1
Marengo County	58
Montgomery County	1
Morgan County	1
Pike County	1
Sumter County	14
Talladega County	9
Tallapoosa County	2
Tuscaloosa County	1
Washington County	3
Wilcox County	2
Total	149
Maryland:	
Charles County—	
Port Tobacco, R. D.	1
Brentland	1
White, R. D.	2
Bolton, R. D.	1
Waldorf, R. D.	1
Beantown, R. D.	1
Maryland—Continued.	
Somerset County—	
Crisfield	1
Talbot County—	
St. Michaels	1
Wicomico County—	
Salisbury	3
Worcester County—	
Pocomoke	1
Total	13
Massachusetts:	
Bristol County—	
Fall River	1
Mansfield (town)	2
Essex County—	
Haverhill	1
Lawrence	1
Middlesex County—	
Marlboro	1
Norfolk County—	
Dedham (town)	1
Plymouth County—	
Brockton	1
Suffolk County—	
Boston	2
Worcester County—	
Northbridge (town)	4
Total	14

City Reports for Week Ended July 31, 1920.

Place.	Cases.	Deaths.
Alabama:		
Birmingham	1	1
Arkansas:		
Little Rock	3	.....
California:		
Los Angeles	2	.....
Georgia:		
Atlanta	1	.....
Brunswick	3	.....
Rome	1	.....
Savannah	5	.....
Louisiana:		
Alexandria	19	.....
Massachusetts:		
Lawrence	1	.....
New York:		
Hudson	1	.....
North Carolina:		
Wilmington	.....	1
Ohio:		
Akron	1	.....
South Carolina:		
Charleston	.....	1
Texas:		
Beaumont	.....	3
Dallas	26	.....

MEASLES.

See Telegraphic weekly reports from States, p. 1979; Monthly summaries by States, p. 1982; and Weekly reports from cities, p. 1995.

PELLAGRA.

Alabama and Massachusetts—July, 1920.

Place.	New cases reported.	Place.	New cases reported.
Alabama:		Massachusetts:	
Autauga County	1	Essex County—	
Butler County	1	Danvers (town)	2
Dallas County	1	Hampshire County—	
Lowndes County	6	Northampton (town)	1
Macon County	2	Norfolk County—	
Mobile County	1	Wrentham (town)	1
Sumter County	1		
Total	13	Total	4

City Reports for Week Ended July 31, 1920.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Georgia:			Texas:		
Savannah		1	Beaumont		1
Massachusetts:			Waco		1
Lynn		1	Virginia:		
New York:			Richmond		1
New York		1			

PLAGUE.

Human Cases of Plague Reported.

Place.	Period covered.	Cases.	Deaths.	Remarks.
California:				
Alameda County	Apr. 19, 1920	1	1	Diagnosis confirmed Apr. 26.
Florida:				
Pensacola	June 2 to Aug. 9, 1920	7	4	
Do	Aug. 10–16	0		
Hawaii:				
Kalopa	Mar. 22, 1920	1		
Louisiana:				
New Orleans	Oct. 29 to Dec. 31, 1919	12	4	
	Jan. 1 to Aug. 9, 1920	4	1	
Do	Aug. 10–16	0		
Texas:				
Beaumont	June 26 to Aug. 9, 1920	12	3	
Do	Aug. 10–16	0		
Galveston	June 16 to Aug. 9, 1920	6	4	
Do	Aug. 10–16	1		
Port Arthur	July 7, 1920	1	1	From Galveston.

Plague-Infected Rodents.

Place.	Period covered.	Rodents found plague infected.
California:		
Ground squirrels (Citellus beecheyi)—	1920.	
Alameda County	Apr. 11 to July 10	28
Contra Costa County	Apr. 18 to July 10	46
Merced County	May 23 to July 10	1
Monterey County	June 13 to July 10	3
San Benito County	May 16 to July 10	16
San Mateo County	do	3
San Joaquin County	Apr. 18 to July 10	4
Santa Clara County	Apr. 11 to July 10	12
Santa Cruz County	May 9 to July 10	25
Santa Cruz	May 16 to July 10	1
Stanislaus County	May 30 to July 10	2

PLAGUE—Continued.

Plague-Infected Rodents—Continued.

Place.	Period covered.	Rodents found plague infected.
Florida:		
Pensacola	June 28 to Aug. 9	26
Do	Aug. 10-16	3
Louisiana:	1919.	
New Orleans	Nov. 1 to Dec. 31	276
	1920.	
New Orleans	Jan. 1 to Aug. 9	285
Do	Aug. 10-16	0
Texas:		
Beaumont	July 1 to Aug. 9	114
Do	Aug. 10-16	7
Galveston	June 21 to Aug. 9	47
Do	Aug. 10-16	2

Rodents Examined for Plague Infection.

Place.	Period covered.	Rodents examined.	Found infected.
Louisiana:			
New Orleans—			
Mus norvegicus	Week ended July 31	2,995	1
Mus rattus	do	324	0
Mus alexandrinus	do	363	0
Wood rats	do	12	0
Miscellaneous	do	2	0
Putrid	do	170	0

PNEUMONIA (ALL FORMS).

City Reports for Week Ended July 31, 1920.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Alabama:			Illinois—Continued.		
Birmingham		1	Chicago	45	23
Arizona:			Elgin		1
Tucson		1	Peoria		1
California:			Indiana:		
Berkeley		2	East Chicago		2
Fresno		1	Gary		2
Long Beach	1		Indianapolis		4
Los Angeles	11	3	La Fayette		1
Oakland		3	Marion		1
Sacramento		1	Richmond		1
San Diego	1	1	Iowa:		
San Francisco	5	6	Burlington		1
Santa Barbara		1	Fort Dodge		1
Stockton		1	Kansas:		
Colorado:			Wichita	1	2
Denver		5	Kentucky:		
Pueblo		2	Covington		1
Connecticut:			Louisville		4
Bridgeport		1	Louisiana:		
New Haven		1	New Orleans		5
District of Columbia:			Maryland:		
Washington		8	Baltimore	11	6
Georgia:			Cumberland	3	
Atlanta		4	Massachusetts:		
Illinois:			Adams	1	
Alton	1	1	Boston	7	11
Bloomington		1	Brockton		2
Chicago Heights		2	Chelsea		1

PNEUMONIA (ALL FORMS)—Continued.

City Reports for Week Ended July 31, 1920—Continued.

Place.	Cases.	Deaths.
Massachusetts—Continued.		
Danvers	2	2
Gardner		1
Holyoke		2
Lawrence		1
Lowell		1
Lynn	1	
Malden	2	1
Methuen		1
Newton	1	1
Southbridge		1
Waltham	1	
Worcester		2
Michigan:		
Detroit	10	7
Kalamazoo	1	1
Pontiac	1	
Port Huron		1
Traverse City	1	
Minnesota:		
Duluth		1
Minneapolis	1	1
St. Paul		1
Missouri:		
Kansas City	4	1
Montana:		
Butte		2
Nebraska:		
Omaha		4
New Jersey:		
Atlantic City	1	2
Englewood	2	2
Hackensack		1
Hoboken		1
Jersey City	1	
Newark	20	3
Orange	1	
Paterson	2	
Trenton	1	
West New York		3
New York:		
Albany	1	
Binghamton	1	
Buffalo		1
Elmira	1	
Jamestown	1	
New York—Continued.		
Mount Vernon		1
New York	53	47
Olean		1
Port Chester	1	1
Rochester		1
Schenectady	1	
Syracuse	4	3
Troy	1	
Watertown	1	
North Carolina:		
Greensboro		1
Wilmington		1
Ohio:		
Akron	2	
Cincinnati	2	1
Cleveland	4	8
Columbus		1
Piqua	1	1
Springfield		2
Tiffin		1
Toledo		1
Zanesville		1
Oregon:		
Portland		2
Pennsylvania:		
Philadelphia	24	18
Rhode Island:		
Newport		1
Providence		3
South Carolina:		
Charleston		2
Tennessee:		
Nashville		1
Texas:		
El Paso		3
Galveston		1
Utah:		
Salt Lake City		2
Virginia:		
Petersburg		1
Portsmouth		1
Richmond		8
Wisconsin:		
Milwaukee		3
Superior		1

POLIOMYELITIS (INFANTILE PARALYSIS).

State Reports for June and July, 1920.

Place.	New cases reported.
Alabama (July):	
Crenshaw County	1
Jefferson County	1
Total	2
Colorado (June):	
Garfield County	1
Maryland (July):	
Baltimore	1
Washington County	1
Total	2
Massachusetts (July):	
Essex County—	
Lawrence	2
Lynn	1
Middlesex County—	
Malden	1
Newton	1
Massachusetts (July)—Continued.	
Norfolk County—	
Dedham (town)	1
Medfield (town)	1
Weymouth (town)	1
Suffolk County—	
Boston	7
Chelsea	1
Worcester County—	
Rutland (town)	1
Total	17
North Carolina (July):	
Bertie County	1
Brunswick County	1
McDowell County	1
Swain County	1
Total	4

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

City Reports for Week Ended July 31, 1920.

The column headed "Average cases" gives the average number of cases reported during the corresponding week of previous years for which data are available. The years used are 1915 to 1919, inclusive, but in many instances the information is not available for the full five years. In these cases the average includes from one to four years.

Place.	Average cases.	1920		Place.	Average cases.	1920	
		Cases.	Deaths.			Cases.	Deaths.
Connecticut:				New York:			
Waterbury	.....	1	1	New York	.....	5	2
Illinois:				Ohio:			
La Salle	.....	1	.....	Cleveland	1	1	.....
Louisiana:				Pennsylvania:			
New Orleans	(1)	3	1	Philadelphia	4	2	.....
Maryland:				Rhode Island:			
Baltimore	2	1	.....	Providence	(1)	1	.....
Massachusetts:				Virginia:			
Boston	1	8	.....	Norfolk	0	1	.....
Chelsea	0	1	.....	West Virginia:			
Lawrence	(1)	1	.....	Wheeling	0	1	.....
Malden	0	1	.....	Wisconsin:			
Minnesota:				Fond du Lac	(1)	1	.....
Minneapolis	0	1	.....				

[1] Average less than 1.

RABIES IN ANIMALS.

Detroit, Mich.—Week Ended July 31, 1920.

During the week ended July 31, 1920, one case of rabies in animals was reported at Detroit, Mich.

SCARLET FEVER.

See Telegraphic weekly reports from States, p. 1979; Monthly summaries by States, p. 1982; and Weekly reports from cities, p. 1995.

SMALLPOX.

State Reports for June and July, 1920—Vaccination Histories.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Vaccinated within 7 years preceding attack.	Last vaccinated more than 7 years preceding attack.	Never successfully vaccinated.	History not obtained or uncertain.
Colorado (June):						
Adams County	5	.....	1	.....	2	2
Alamosa County	2	.....	1	.....	1	.....
Boulder County	4	.....	.....	.....	3	1
Chaffee County	1	.....	1	.....	.....	.....
Delta County	21	.....	.....	.....	.....	21
Denver	87	.....	4	.....	82	1
El Paso County	15	.....	1	.....	12	2
Fremont County	1	.....	.....	.....	1	.....
Huerfano County	7	.....	.....	.....	5	2
Larimer County	11	.....	.....	.....	.....	11
Las Animas County	1	.....	.....	.....	1	.....
Mesa County	17	.....	.....	.....	.....	17
Montezuma County	5	.....	.....	.....	5	.....
Otero County	2	.....	.....	.....	2	.....

SMALLPOX—Continued.

State Reports for June and July, 1920—Vaccination Histories—Continued.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Vaccinated within 7 years preceding attack.	Last vaccinated more than 7 years preceding attack.	Never successfully vaccinated.	History not obtained or uncertain.
Colorado (June)—Continued.						
Phillips County	10	.....	2	.....	8	.....
Prowers County	3	.....	.....	.....	2	1
Pueblo County	7	.....	.....	.....	2	5
Weld County	39	.....	3	.....	25	11
Total	238	.....	13	.....	151	74
District of Columbia (June)	13	.....	.....	.....	13	.....
District of Columbia (July)	10	.....	.....	.....	10	.....
Maryland (July):						
Baltimore	1	.....	.....	.....	1	.....
Charles County—						
Bryantown, R. D.	1	.....	.....	.....	1	.....
Garrett County—						
Crellin	2	.....	.....	.....	2	.....
Wicomico County—						
Salisbury	4	.....	.....	.....	4	.....
Total	8	.....	.....	.....	8	.....
Massachusetts (July):						
Hampden County—						
Chicopee	3	.....	.....	1	2	.....
Middlesex County—						
Lowell	1	.....	.....	.....	1	.....
Total	4	.....	.....	1	3	.....

State Reports for July, 1920.

Place.	Cases.	Deaths.
Alabama:		
Autauga County	12	.....
Baldwin County	2	.....
Etowah County	12	.....
Jackson County	1	.....
Jefferson County	25	.....
Limestone County	2	.....
Madison County	4	.....
Mobile County	13	.....
Montgomery County	1	.....
Shelby County	3	.....
Total	75	.....
Arizona:		
Graham County	1	.....
Maricopa County	2	.....
Total	3	.....
Nebraska:		
Adams County	4	.....
Banner County	2	.....
Box Butte County	3	.....
Burt County	2	.....
Cass County	1	.....
Clay County	2	.....
Custer County	1	.....
Deuel County	1	.....
Douglas County	15	.....
Dundy County	7	.....
Franklin County	1	.....
Gage County	1	.....
Nebraska—Continued.		
Hamilton County	13	.....
Holt County	5	.....
Johnson County	1	.....
Kearney County	1	.....
Knox County	1	.....
Lancaster County	4	.....
Lincoln County	2	.....
McPherson County	1	.....
Merrick County	8	.....
Nemaha County	3	.....
Nuckolls County	3	.....
Sheridan County	1	.....
Stanton County	1	.....
Thayer County	2	.....
Wayne County	25	.....
York County	1	.....
Total	112	.....
North Carolina:		
Alamance County	1	.....
Alexander County	1	.....
Beaufort County	4	.....
Buncombe County	4	.....
Clay County	1	.....
Columbus County	1	.....
Craven County	1	.....
Cumberland County	4	.....
Currituck County	2	.....
Davidson County	2	.....
Forsyth County	9	.....
Gaston County	8	.....

SMALLPOX—Continued.

State Reports for July, 1920—Continued.

Place.	Cases.	Deaths.
North Carolina—Continued.		
Gates County	2	.....
Granville County	3	.....
Guilford County	1	.....
Halifax County	5	.....
Harnett County	2	.....
Hoke County	1	.....
Iredell County	1	.....
Jackson County	6	.....
Johnston County	4	.....
Lincoln County	1	.....
McDowell County	1	.....
Mecklenburg	2	.....
Nash County	9	.....
Orange County	3	.....
Pasquetank County	5	.....
Pender County	1	.....
Pitt County	12	.....
Rockingham County	10	.....
Rowan County	2	.....
Sampson County	2	.....
Scotland County	1	.....
Stokes County	2	.....
Swain County	1	.....
Vance County	7	.....
Wake County	6	.....
Warren County	4	.....
Washington County	9	.....
Watauga County	1	.....
Wayne County	2	.....
Wilson County	11	.....
Total	155	.....

City Reports for Week Ended July 31, 1920.

The column headed "Average cases" gives the average number of cases reported during the corresponding week of previous years for which data are available. The years used are 1915 to 1919, inclusive, but in many instances the information is not available for the full five years. In these cases the average includes from one to four years.

Place.	Average cases.	1920	
		Cases.	Deaths.
Alabama:			
Birmingham	(1)	1	.....
Mobile	0	1	.....
California:			
Berkeley	0	1	.....
Los Angeles	(1)	3	.....
Oakland	(1)	10	.....
Sacramento	0	5	.....
Santa Cruz	0	1	.....
Colorado:			
Denver	2	7	.....
Pueblo	0	1	.....
District of Columbia:			
Washington	0	1	.....
Georgia:			
Atlanta	5	4	.....
Idaho:			
Boise	(1)	5	.....
Illinois:			
East St. Louis	0	1	.....
Galesburg	(1)	1	.....
Peoria	(1)	1	.....
Rock Island	1	3	.....
Indiana:			
Bedford	0	3	.....
Elkhart	.....	1	.....
Fort Wayne	(1)	1	.....
Hammond	0	1	.....
Huntington	.....	7	.....
South Bend	(1)	2	.....
Iowa:			
Council Bluffs	1	1	.....
Davenport	3	1	.....
Dubuque	(1)	5	.....
Sioux City	2	2	.....
Kansas:			
Leavenworth	(1)	1	.....
Parsons	0	1	.....
Louisiana:			
Lake Charles	.....	3	.....
Massachusetts:			
Chicopee	0	1	.....
Michigan:			
Battle Creek	(1)	1	.....
Detroit	3	3	.....
Grand Rapids	(1)	2	.....
Port Huron	.....	1	.....
Minnesota:			
Duluth	1	1	.....
Minneapolis	6	19	.....
St. Paul	2	9	.....
Stillwater	0	1	.....
Winona	(1)	3	.....
Missouri:			
Kansas City	2	3	.....
St. Joseph	2	1	.....
St. Louis	1	2	.....
Montana:			
Billings	.....	2	.....
Nebraska:			
Lincoln	2	1	.....
Omaha	3	5	.....
Nevada:			
Reno	0	2	.....
New York:			
New York	0	1	.....
North Carolina:			
Rocky Mount	0	1	.....
Winston-Salem	(1)	1	.....
Ohio:			
Akron	3	5	.....
Canton	(1)	4	.....
Cincinnati	(1)	2	.....
Cleveland	5	3	.....
Lancaster	0	1	.....
Piqua	0	2	.....
Springfield	(1)	1	.....
Steubenville	0	1	.....
Oklahoma:			
Oklahoma City	2	4	.....

[1] Average less than 1.

SMALLPOX—Continued.

City Reports for Week Ended July 31, 1920—Continued.

Place.	Average cases.	1920 Cases.	1920 Deaths.	Place.	Average cases.	1920 Cases.	1920 Deaths
Oregon:				Washington—Continued.			
Portland	7	6	.....	Seattle	6	12	.....
Pennsylvania:				Spokane	5	5	.....
Pittsburgh	(1)	1	.....	Yakima	2	4	.....
South Carolina:				West Virginia:			
Charleston	(1)	1	.....	Bluefield	0	2	.....
Columbia	0	1	.....	Moundsville	.....	1	.....
Texas:				Wisconsin:			
Fort Worth	1	1	.....	Kenosha	0	3	.....
Virginia:				Milwaukee	3	8	.....
Roanoke	1	1	.....	Oshkosh	0	1	.....
Washington:				Sheboygan	0	2	.....
Bellingham	(1)	1	.....	Superior	2	4	.....
Everett	0	1	.....	Wausau	0	2	.....

[1] Average less than 1.

TETANUS.

City Reports for Week Ended July 31, 1920.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
California:			Missouri:		
Los Angeles	1	1	Jefferson City	.....	1
Illinois:			St. Louis	2	.....
Chicago	1	1	Nebraska:		
East St. Louis	1	1	Omaha	1	1
Quincy	.....	1	New York:		
Louisiana:			New York	1	.....
New Orleans	.....	1	Pennsylvania:		
Maine:			Philadelphia	1	.....
Portland	.....	1	Texas:		
Massachusetts:			Dallas	.....	1
Boston	1	.....			
Michigan:					
Detroit	.....	1			

TUBERCULOSIS.

See Telegraphic weekly reports from States, p. 1979, and Weekly reports from cities, p. 1995.

TYPHOID FEVER.

State Reports for June and July, 1920.

Place.	New cases reported.	Place.	New cases reported.
Alabama (July):		Alabama (July)—Continued.	
Autauga County	1	Covington County	6
Baldwin County	2	Crenshaw County	1
Barbour County	3	Etowah County	2
Bibb County	4	Fayette County	1
Blount County	1	Geneva County	4
Bullock County	7	Henry County	2
Calhoun County	4	Houston County	2
Cherokee County	3	Jefferson County	34
Chilton County	3	Lamar County	1
Clarke County	1	Lauderdale County	1
Coffee County	4	Limestone County	1
Colbert County	5	Lowndes County	2
Conecuh County	2	Macon County	1
Coosa County	1	Madison County	6

TYPHOID FEVER—Continued.

State Reports for June and July, 1920—Continued.

Place.	New cases reported.
Alabama (July)—Continued.	
Marengo County	14
Marion County	3
Mobile County	15
Monroe County	3
Montgomery County	6
Morgan County	1
Pike County	4
Sumter County	2
Talladega County	6
Tallapoosa County	1
Tuscaloosa County	15
Walker County	2
Wilcox County	3
Winston County	2
Total	182
Arizona (July):	
Cochise County	1
Gila County	1
Graham County	1
Greenlee County	3
Maricopa County	5
Pima County	15
Yavapai County	5
Total	31
Colorado (June):	
Alamosa County	3
Arapahoe County	1
Archuleta County	1
Denver	2
Huerfano County	1
Mesa County	1
Montezuma County	4
Pueblo County	5
Total	18
District of Columbia (June)	7
District of Columbia (July)	14
Maryland (July):	
Baltimore	33
Allegany County—	
Cumberland	6
Luke	1
Allegany Hospital	1
Kiefer, R. D	1
Anne Arundel County—	
Patapsco Station	1
Baltimore County—	
Ruxton	1
Ellicott City, R. D	1
Cockeysville	1
Calvert County—	
Bowens	1
Caroline County—	
Greensboro	1
Carroll County—	
Linwood, R. D	1
Union Bridge, R. D	5
Finksburg, R. D	1
Asbestos	1
Charles County—	
Beantown, R. D	1
Benedict	2
Mt. Victoria, R. D	1
Dorchester County—	
Crocheron	1
Reliance	1
Secretary	1
Frederick County—	
Blue Ridge Summit	1
Burkittsville, R. D	1
Frederick, R. D	1

Place.	New cases reported.
Maryland (July)—Continued.	
Frederick County—Continued.	
Union Bridge, R. D	1
Buckeystown, R. D	1
Jefferson, R. D	1
Garrett County—	
Selbysport	1
Vindex	1
Howard County—	
Elk Ridge	1
Kent County—	
Sassafras	1
Millington	1
Montgomery County—	
Norbeck, R. D	1
Sandy Springs, R. D	1
Dawsonville, R. D	1
Bethesda	1
Washington Sanatorium	1
Boyd, R. D	1
Prince Georges County—	
Hyattsville	1
Somerset County—	
Dames Quarter	1
Hopewell	1
Wenona	1
Westover	1
Marumsco	2
Talbot County—	
Easton	1
Cordova, R. D	1
Washington County—	
Security	2
Hancock	1
Hagerstown	1
Hagerstown, R. D	1
Wicomico County—	
Mount Hermon, R. D	1
Worcester County—	
Berlin, R. D	2
Pocomoke City	1
Total	98
Massachusetts (July):	
Barnstable County—	
Barnstable (town)	1
Harwich (town)	1
Berkshire County—	
Adams (town)	1
Pittsfield	1
Bristol County—	
Attleboro	1
Fairhaven (town)	1
Fall River	10
New Bedford	4
Taunton	2
Essex County—	
Beverly	2
Gloucester	2
Lawrence	3
Lynn	4
Franklin County—	
Buckland (town)	1
Orange (town)	1
Hampden County—	
Springfield	3
Westfield (town)	1
Hampshire County—	
Northampton (town)	1
Middlesex County—	
Arlington (town)	1
Cambridge	2
Concord (town)	1
Lowell	6
Malden	4
Somerville	3
Waltham	3
Woburn	1

TYPHOID FEVER—Continued.

State Reports for June and July, 1920—Continued.

Place.	New cases reported.
Massachusetts (July)—Continued.	
Norfolk County—	
Brookline (town)	1
Foxboro (town)	2
Plymouth County—	
Brockton	2
Hanover (town)	1
Hingham (town)	1
Suffolk County—	
Boston	15
Chelsea	14
Revere	1
Worcester County—	
Fitchburg	1
Sterling (town)	2
Worcester	3
Total	104
Nebraska (July):	
Clay County	1
Douglas County	2
Lancaster County	1
Seward County	1
York County	1
Total:	6
North Carolina (July):	
Alamance County	3
Anson County	5
Ashe County	1
Avery County	2
Beaufort County	3
Bertie County	3
Bladen County	2
Carteret County	5
Catawba County	10
Chatham County	3
Cherokee County	3
Chowan County	1
Cleveland County	2
Columbus County	8
Cumberland County	4
Davidson County	3
Davie County	5
Duplin County	1
Durham County	20
Edgecombe County	9
Forsyth County	17
Franklin County	13
Gaston County	22
Gates County	3
Graham County	1
Granville County	7

Place.	New cases reported.
North Carolina (July)—Continued.	
Greene County	10
Guilford County	14
Halifax County	11
Harnett County	10
Haywood County	2
Henderson County	2
Hertford County	5
Iredell County	3
Jackson County	1
Johnston County	7
Lee County	1
Lenoir County	2
Lincoln County	3
Martin County	8
Mecklenburg County	6
Montgomery County	5
Nash County	6
New Hanover County	1
Northampton County	9
Orange County	2
Pamlico County	1
Pasquotank County	14
Pender County	2
Perquimans County	9
Person County	2
Pitt County	12
Randolph County	14
Richmond County	3
Robeson County	12
Rockingham County	3
Rowan County	7
Sampson County	5
Surry County	5
Tyrrell County	2
Wake County	5
Warren County	2
Washington County	2
Watauga County	6
Wayne County	2
Wilkes County	3
Wilson County	18
Yadkin County	2
Yancey County	1
Total	393
Rhode Island (June):	
Providence	4
Bristol County—	
Warren (town)	1
Kent County—	
West Warwick (town)	1
Total	6

TYPHOID FEVER—Continued.

City Reports for Week Ended July 31, 1920.

The column headed "Average cases" gives the average number of cases reported during the corresponding week of previous years for which data are available. The years used are 1915 to 1919, inclusive, but in many instances the information is not available for the full five years. In these cases the average includes from one to four years.

Place.	Average cases.	1920	
		Cases.	Deaths.
Alabama:			
Birmingham	25	1	1
Mobile	1	1	1
Arizona:			
Tucson	.....	.....	1
Arkansas:			
Fort Smith	.....	1	.....
Little Rock	4	1	.....
California:			
Berkeley	(1)	1	.....
Los Angeles	4	7	1
Oakland	(1)	1	.....
Redlands	0	2	1
Sacramento	(1)	3	.....
San Francisco	3	.....	1
Colorado:			
Denver	1	7	.....
Pueblo	0	1	.....
Trinidad	.....	5	.....
Connecticut:			
New Haven	3	1	.....
Stamford	0	1	.....
District of Columbia:			
Washington	8	7	2
Georgia:			
Athens	.....	5	.....
Atlanta	4	2	.....
Rome	1	4	.....
Savannah	1	1	1
Illinois:			
Chicago	9	2	2
East St. Louis	1	1	.....
Evanston	0	1	.....
Kankakee	0	2	.....
Peoria	0	1	.....
Indiana:			
Elkhart	.....	2	.....
Gary	.....	.....	1
Hammond	1	1	.....
Indianapolis	1	4	.....
Terre Haute	1	1	.....
Iowa:			
Davenport	(1)	1	.....
Kansas:			
Hutchinson	4	1	.....
Kansas City	1	3	.....
Topeka	0	3	1
Wichita	4	1	.....
Kentucky:			
Louisville	10	1	.....
Paducah	.....	1	.....
Louisiana:			
Alexandria	1	1	.....
Baton Rouge	1	1	1
New Orleans	9	3	1
Maine:			
Portland	2	2	.....
Maryland:			
Baltimore	19	16	.....
Massachusetts:			
Attleboro	(1)	1	.....
Beverly	0	1	.....
Boston	6	6	.....
Brookline	0	1	.....
Cambridge	0	2	.....
Chelsea	(1)	10	.....
Fall River	2	1	.....
Lawrence	1	1	1
Massachusetts—Contd.			
Lowell	(1)	2	1
Malden	(1)	1	.....
Somerville	(1)	.....	1
Springfield	(1)	1	1
Worcester	(1)	1	.....
Michigan:			
Detroit	14	1	1
Flint	1	6	2
Grand Rapids	1	4	.....
Minnesota:			
Duluth	(1)	3	1
Minneapolis	2	1	.....
St. Paul	(1)	13	.....
Winona	0	1	.....
Missouri:			
Kansas City	1	2	.....
St. Louis	8	7	1
Springfield	0	.....	1
Montana:			
Great Falls	1	1	.....
Missoula	0	1	1
Nebraska:			
Lincoln	0	1	.....
Nevada:			
Reno	2	1	.....
New Jersey:			
Englewood	0	1	.....
Hoboken	0	.....	1
New Brunswick	0	1	.....
New York:			
Albany	(1)	3	.....
Binghamton	(1)	1	.....
Buffalo	3	.....	1
Elmira	1	1	.....
Lockport	0	1	.....
New York	38	29	4
North Tonawanda	1	1	1
Rochester	2	1	1
Syracuse	(1)	1	.....
North Carolina:			
Charlotte	15	2	.....
Durham	1	3	.....
Raleigh	0	1	.....
Rocky Mount	0	1	.....
Wilmington	1	.....	1
Winston-Salem	6	4	.....
Ohio:			
Akron	(1)	2	.....
Cleveland	5	4	.....
Columbus	5	1	.....
Dayton	2	1	.....
Findlay	0	1	.....
Ironton	2	.....	1
New Philadelphia	.....	1	.....
Piqua	(1)	1	.....
Oklahoma:			
Muskogee	0	2	.....
Oklahoma City	4	1	2
Pennsylvania:			
Bradford	0	4	.....
Erie	(1)	2	.....
Philadelphia	13	7	1
Pittsburgh	4	3	.....
Reading	1	1	.....
Shenandoah	0	1	.....
West Chester	0	1	.....
York	(1)	3	.....

[1] Average less than 1.

TYPHOID FEVER—Continued.

City Reports for Week Ended July 31, 1920—Continued.

Place.	Average cases.	1920	
		Cases.	Deaths.
South Carolina:			
Charleston	5	3	
Columbia	2	1	
South Dakota:			
Sioux Falls	0	1	
Tennessee:			
Knoxville	6	13	1
Texas:			
Corpus Christi	1	2	1
Dallas	1	10	1
Fort Worth	10	3	
Galveston	2	1	
Utah:			
Salt Lake City	2	1	
Virginia:			
Norfolk	7	1	
Petersburg	3	1	
Portsmouth	3	2	
Richmond	8		2
Roanoke	1	1	
Washington:			
Seattle	1	3	
West Virginia:			
Charleston	7	1	
Fairmont	5	5	
Morgantown	0	1	1
Wisconsin:			
Beloit	0	1	
Kenosha	(1)	2	
Milwaukee	1	1	1
Oshkosh	0	2	

[1] Average less than 1.

TYPHUS FEVER.

El Paso, Tex.

On August 10, 1920, one case of typhus fever was reported in El Paso, Tex.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

City Reports for Week Ended July 31, 1920.

City.	Population as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Aberdeen, S. Dak.	15,926	4								
Adams, Mass.	14,406	3			2				1	
Akron, Ohio	93,604	34	2						3	
Alameda, Calif.	28,433	9			1					
Albany, N. Y.	106,632		1		16		1		4	
Alexandria, La.	16,232	3			1					
Alexandria, Va.	17,959	7							1	
Allentown, Pa.	65,109		6		13				2	
Alliance, Ohio	19,581	5					1			
Alpena, Mich.	13,365		2							
Alton, Ill.	23,783	8					1		1	1
Amesbury, Mass.	10,200	0					1			
Anaconda, Mont.	10,631	0	1				1		1	
Ann Arbor, Mich.	15,041	6								
Arlington, Mass.	13,073	4					1		1	
Asbury Park, N. J.	14,629	4			1					
Ashland, Wis.	[1] 11,594				1					
Ashtabula, Ohio	22,008	4					1			
Atchison, Kans.	16,785				1					
Athens, Ga.	18,319						1		1	
Atlanta, Ga.	196,144	44	1							4
Atlantic City, N. J.	53,515	11	3		2				2	
Attleboro, Mass.	19,776	5	1		1					1
Auburn, Me.	16,607	0								
Aurora, Ill.	34,795	10			5		1			
Baltimore, Md.	594,637	203	13		21		6		32	16
Bangor, Me.	26,958		4						1	

[1] Population Apr. 15, 1910.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City Reports for Week Ended July 31, 1920—Continued.

City.	Population as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Barberton, Ohio	14,187	6	.....	.....	.....	.....	.....	.....	.....	.....
Baton Rouge, La	17,544	3	.....	.....	.....	.....	.....	.....	1	1
Battle Creek, Mich	30,159	.....	1	.....	1	.....	1	.....	.....	.....
Bayonne, N. J	72,204	.....	2	.....	.....	.....	.....	.....	1	.....
Beatrice, Nebr	10,437	3	.....	.....	.....	.....	.....	.....	.....	.....
Beaumont, Tex	28,851	16	1	.....	.....	.....	1	.....	.....	1
Bedford, Ind	10,613	2	.....	.....	.....	.....	.....	.....	.....	.....
Bellingham, Wash	34,362	.....	.....	.....	1	.....	.....	.....	.....	.....
Beloit, Wis	18,547	.....	.....	.....	.....	.....	.....	.....	1	.....
Benton Harbor, Mich	11,099	3	1	.....	.....	.....	.....	.....	.....	1
Berkeley, Calif	60,427	13	2	.....	1	.....	2	.....	2	.....
Berlin, N. H	13,892	3	.....	.....	.....	.....	1	.....	.....	.....
Bethlehem, Pa	14,353	.....	3	.....	6	.....	.....	.....	3	.....
Beverly, Mass	22,128	4	.....	.....	.....	.....	.....	.....	1	.....
Billings, Mont	13,123	4	.....	.....	1	.....	1	.....	.....	.....
Binghampton, N. Y	54,864	12	.....	.....	12	.....	.....	.....	7	1
Birmingham, Ala	189,716	44	5	.....	1	.....	4	.....	5	2
Bloomfield, N. J	19,043	2	.....	.....	9	.....	.....	.....	2	1
Bloomington, Ill	27,462	3	.....	.....	.....	.....	.....	.....	4	.....
Bluefield, W. Va	16,123	1	1	.....	.....	.....	.....	.....	.....	.....
Boise, Idaho	35,951	3	.....	.....	3	.....	.....	.....	.....	.....
Boston, Mass	767,813	164	20	2	18	1	15	.....	49	22
Bradford, Pa	[1] 14,544	.....	.....	.....	8	.....	.....	.....	.....	.....
Brazil, Ind	10,472	3	.....	.....	.....	.....	2	.....	.....	.....
Bridgeport, Conn	124,724	23	5	1	.....	1	4	.....	1	4
Bristol, Conn	16,318	2	.....	.....	.....	.....	.....	.....	1	.....
Brockton, Mass	69,152	13	2	.....	.....	.....	.....	.....	.....	1
Brookline, Mass	33,526	7	2	.....	2	.....	.....	.....	.....	.....
Buffalo, N. Y	475,781	102	.....	1	.....	.....	.....	.....	.....	7
Burlington, Iowa	25,144	.....	.....	.....	.....	.....	1	.....	.....	.....
Burlington, Vt	21,802	5	1	.....	1	.....	1	.....	.....	.....
Butler, Pa	28,677	.....	.....	.....	.....	.....	4	.....	2	.....
Butte, Mont	44,057	11	.....	.....	1	.....	.....	.....	2	2
Cadillac, Mich	10,158	2	.....	.....	.....	.....	.....	.....	.....	.....
Cairo, Ill	15,935	4	.....	.....	.....	.....	.....	.....	.....	.....
Cambridge, Mass	114,293	23	2	1	14	.....	1	.....	3	1
Canton, Ill	13,674	2	.....	.....	.....	.....	.....	.....	.....	.....
Canton, Ohio	62,566	9	.....	.....	.....	.....	3	.....	1	.....
Cape Girardeau, Mo	11,146	2	.....	.....	.....	.....	.....	.....	.....	.....
Charleston, S. C	61,041	20	.....	.....	.....	.....	.....	.....	.....	.....
Charleston, W. Va	31,060	.....	.....	.....	1	.....	.....	.....	.....	.....
Charlotte, N. C	40,759	9	.....	.....	3	.....	1	.....	2	.....
Chelsea, Mass	48,405	5	2	.....	3	.....	.....	.....	1	.....
Cheyenne, Wyo	[1] 11,320	5	.....	.....	.....	.....	.....	1	.....	.....
Chicago Heights, Ill	22,803	3	.....	.....	.....	.....	.....	.....	.....	.....
Chicago, Ill	2,547,201	409	81	8	41	.....	38	.....	153	53
Chicopee, Mass	20,950	9	3	.....	.....	.....	.....	.....	.....	.....
Chillicothe, Ohio	15,625	1	.....	.....	.....	.....	.....	.....	.....	.....
Cincinnati, Ohio	414,248	88	6	.....	1	.....	4	.....	17	7
Cleveland, Ohio	692,259	141	24	1	11	.....	20	.....	24	15
Clinton, Mass	[1] 13,075	1	.....	.....	2	.....	.....	.....	1	.....
Coffeyville, Kans	18,331	4	.....	.....	1	.....	.....	.....	.....	.....
Colorado Springs, Colo	38,905	18	.....	.....	.....	.....	.....	.....	.....	3
Columbus, Ohio	220,135	36	1	1	.....	.....	5	.....	6	4
Concord, N. H	22,858	7	.....	.....	1	.....	.....	.....	.....	.....
Corpus Christi, Tex	10,789	5	.....	.....	.....	.....	.....	.....	.....	.....
Council Bluffs, Iowa	31,838	6	.....	.....	.....	.....	.....	.....	.....	1
Covington, Ky	59,623	19	.....	.....	1	.....	.....	.....	.....	1
Cranston, R. I	26,773	6	.....	.....	.....	.....	.....	.....	.....	.....
Cumberland, Md	26,086	4	1	.....	1	.....	.....	.....	1	1
Dallas, Tex	129,738	42	4	1	5	.....	2	1	2	3
Danvers, Mass	10,037	.....	.....	.....	.....	.....	.....	.....	1	1
Danville, Ill	32,909	9	.....	.....	.....	.....	.....	.....	.....	.....
Davenport, Iowa	49,618	.....	1	.....	.....	.....	.....	.....	.....	.....
Dayton, Ohio	128,939	27	1	.....	1	.....	4	.....	.....	.....
Decatur, Ill	41,483	11	.....	.....	.....	.....	1	.....	.....	1
Dedham, Mass	10,618	1	1	.....	.....	.....	2	.....	.....	.....
Denver, Colo	268,439	77	12	2	4	.....	6	.....	.....	15
Detroit, Mich	619,648	195	43	7	3	.....	23	2	31	18
Dover, N. H	13,276	4	.....	.....	.....	.....	.....	.....	.....	1

[1] Population Apr. 15, 1910.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City Reports for Week Ended July 31, 1920—Continued.

City.	Population as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Du Bois, Pa	14,994	.....	2	.....	1	.....	.....	.....	.....	.....
Duluth, Minn	97,077	9	2	.....	2	.....	4	.....	.....	1
Durham, N. C	26,160	7	.....	.....	.....	.....	.....	.....	1	2
East Chicago, Ind	30,286	7	.....	.....	.....	.....	.....	.....	.....	.....
Easton, Pa	30,854	.....	1	.....	4	.....	1	.....	1	.....
East Orange, N. J	43,761	2	.....	.....	5	.....	1	.....	.....	.....
East Providence, R. I	18,485	.....	2	.....	1	.....	.....	.....	.....	.....
East St. Louis, Ill	77,312	12	.....	.....	.....	.....	.....	.....	.....	.....
Eau Claire, Wis	18,887	.....	1	.....	1	.....	1	.....	.....	.....
Elgin, Ill	28,562	5	1	.....	1	.....	.....	.....	.....	.....
Elizabeth, N. J	88,839	21	1	.....	2	.....	7	.....	6	1
Elkhart, Ind	22,273	9	.....	.....	.....	.....	3	.....	.....	.....
Elmira, N. Y	38,272	10	.....	.....	1	.....	.....	.....	4	2
El Paso, Tex	69,149	48	3	.....	.....	.....	.....	.....	.....	9
Elwood, Ind	[1] 11,028	2	.....	.....	.....	.....	.....	.....	.....	.....
Englewood, N. J	12,603	4	.....	.....	.....	.....	.....	.....	.....	.....
Erie, Pa	76,592	.....	3	.....	8	.....	4	.....	1	.....
Eugene, Oreg	14,257	0	.....	.....	.....	.....	.....	.....	.....	.....
Evanston, Ill	29,304	8	3	.....	1	.....	.....	.....	.....	.....
Everett, Mass	40,160	8	.....	.....	.....	.....	.....	.....	.....	1
Everett, Wash	37,205	.....	.....	.....	1	.....	.....	.....	.....	.....
Fairmount, W. Va	16,111	.....	2	.....	.....	.....	.....	.....	.....	.....
Fall River, Mass	129,828	24	2	.....	5	.....	2	.....	5	3
Findlay, Ohio	[1] 14,858	2	.....	.....	1	.....	.....	.....	.....	.....
Flint, Mich	57,386	21	2	.....	.....	.....	3	.....	.....	.....
Fond du Lac, Wis	21,486	.....	1	.....	.....	.....	.....	.....	.....	.....
Fort Dodge, Iowa	21,039	1	.....	.....	.....	.....	.....	.....	.....	.....
Fort Scott, Kans	10,564	3	.....	.....	.....	.....	.....	.....	1	.....
Fort Smith, Ark	29,390	.....	.....	.....	.....	.....	2	.....	.....	.....
Fort Wayne, Ind	78,014	16	2	.....	.....	.....	8	.....	.....	2
Fort Worth, Tex	109,597	31	3	.....	.....	.....	4	.....	.....	.....
Fostoria, Ohio	10,959	5	.....	.....	.....	.....	.....	.....	.....	.....
Framingham, Mass	14,149	8	.....	.....	1	.....	1	.....	.....	.....
Freeport, Ill	19,842	5	.....	.....	.....	.....	.....	.....	.....	.....
Fremont, Nebr	10,080	3	.....	.....	.....	.....	.....	.....	.....	.....
Fremont, Ohio	11,034	0	.....	.....	.....	.....	.....	.....	.....	.....
Fresno, Calif	36,314	7	4	.....	.....	.....	.....	.....	.....	.....
Galesburg, Ill	24,620	2	.....	.....	2	.....	.....	.....	.....	.....
Galveston, Tex	42,650	12	.....	.....	.....	.....	.....	.....	.....	.....
Gardner, Mass	17,534	6	.....	.....	3	.....	1	.....	2	1
Gary, Ind	56,000	10	2	.....	.....	.....	.....	.....	.....	.....
Geneva, N. Y	13,915	5	.....	.....	.....	.....	.....	.....	.....	.....
Grand Rapids, Mich	152,861	23	9	.....	4	.....	.....	.....	6	.....
Great Falls, Mont	[1] 13,948	4	1	.....	1	.....	2	.....	1	.....
Greely, Colo	11,942	2	1	.....	.....	.....	.....	.....	.....	1
Greenfield, Mass	12,251	3	1	.....	.....	.....	.....	.....	.....	.....
Greensboro, N. C	20,171	8	.....	.....	.....	.....	.....	.....	.....	.....
Greenwich, Conn	19,594	8	12	.....	.....	.....	.....	.....	4	2
Hackensack, N. J	17,412	4	1	.....	1	.....	.....	.....	1	.....
Hammond, Ind	27,016	.....	.....	.....	.....	.....	2	.....	.....	.....
Harrisburgh, Pa	73,276	.....	.....	.....	7	.....	.....	.....	.....	.....
Harrison, N. J	17,345	.....	.....	.....	2	.....	.....	.....	.....	.....
Hartford, Conn	112,851	29	3	.....	3	.....	4	.....	7	2
Haverhill, Mass	49,180	7	.....	.....	4	.....	.....	.....	1	1
Hazelton, Pa	28,981	.....	.....	.....	1	.....	.....	.....	.....	.....
Highland Park, Mich	33,859	5	.....	.....	.....	.....	.....	.....	.....	.....
Hoboken, N. J	78,324	9	.....	.....	.....	.....	.....	.....	.....	.....
Holyoke, Mass	66,503	12	1	.....	2	.....	.....	.....	.....	1
Hudson, N. Y	12,808	3	.....	.....	1	.....	2	.....	1	.....
Huntington, Ind	10,982	3	.....	.....	1	.....	.....	.....	.....	.....
Huntington, W. Va	47,686	19	.....	.....	.....	.....	.....	1	.....	2
Hutchinson, Kans	21,461	.....	.....	.....	1	.....	.....	.....	.....	.....
Indianapolis, Ind	283,622	80	4	.....	2	.....	5	.....	5	8
Ironton, Ohio	14,079	8	.....	.....	.....	.....	.....	.....	2	1
Ironwood, Mich	15,095	2	1	.....	19	.....	2	.....	.....	.....
Irvington, N. J	16,710	.....	1	.....	1	.....	2	.....	1	.....
Ishpeming, Mich	[1] 12,448	1	.....	.....	1	.....	.....	.....	.....	1
Ithaca, N. Y	16,017	5	.....	.....	.....	.....	.....	.....	1	.....
Jacksonville, Ill	15,506	8	.....	.....	1	.....	.....	.....	.....	.....
Jamestown, N. Y	37,431	8	.....	.....	10	.....	2	.....	.....	.....
Jefferson City, Mo	13,712	4	.....	.....	.....	.....	.....	.....	.....	.....

[1] Population Apr. 15, 1910.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City Reports for Week Ended July 31, 1920—Continued.

City.	Population as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Jersey City, N. J.	312,557	.....	9	.....	1	.....	.....	.....	12	.....
Johnstown, Pa.	70,437	.....	2	.....	1	.....	.....	.....	1	.....
Kalamazoo, Mich.	50,408	15	1	.....	1	.....	.....	.....	5	1
Kankakee, Ill.	14,270	4	.....	.....	1	.....	.....	.....	.....	.....
Kansas City, Kans.	102,096	.....	.....	.....	1	.....	1	.....	3	.....
Kansas City, Mo.	305,816	64	2	1	2	.....	1	.....	8	8
Kearny, N. J.	24,325	2	.....	.....	11	.....	1	.....	.....	1
Keene, N. H.	10,725	3	.....	.....	2	.....	.....	.....	4	.....
Kenosha, Wis.	32,833	.....	1	.....	5	.....	2	.....	.....	.....
Kewanee, Ill.	13,607	2	.....	.....	.....	.....	.....	.....	.....	.....
Knoxville, Tenn.	59,112	.....	1	1	.....	.....	1	.....	.....	.....
Kokomo, Ind.	21,929	3	.....	.....	.....	.....	.....	.....	.....	.....
La Fayette, Ind.	21,481	12	1	.....	.....	.....	1	.....	.....	.....
Lake Charles, La.	14,930	2	.....	.....	.....	.....	.....	.....	.....	.....
Lancaster, Ohio.	16,086	6	.....	.....	1	.....	2	.....	1	.....
Lancaster, Pa.	51,437	.....	6	.....	5	.....	.....	.....	3	.....
La Salle, Ill.	12,332	3	.....	.....	.....	.....	.....	.....	.....	1
Lawrence, Kans.	13,477	1	.....	.....	.....	.....	.....	.....	.....	1
Lawrence, Mass.	102,923	23	2	.....	11	.....	4	.....	7	5
Leavenworth, Kans.	[1] 19,363	3	.....	.....	.....	.....	.....	.....	.....	.....
Lebanon, Pa.	20,947	.....	3	.....	.....	.....	.....	.....	3	.....
Leominster, Mass.	21,365	2	1	.....	1	.....	.....	.....	3	.....
Lexington, Ky.	41,997	16	.....	.....	3	.....	.....	.....	1	2
Lincoln, Nebr.	46,957	9	.....	.....	1	.....	.....	.....	2	.....
Little Rock, Ark.	58,716	.....	.....	.....	.....	.....	1	.....	2	.....
Lockport, N. Y.	20,028	3	.....	.....	.....	.....	1	.....	.....	.....
Logansport, Ind.	21,338	7	.....	.....	.....	.....	.....	.....	.....	.....
Long Beach, Calif.	29,163	9	.....	.....	3	.....	.....	.....	2	.....
Lorain, Ohio.	38,266	.....	.....	.....	4	.....	2	.....	.....	.....
Los Angeles, Calif.	535,485	129	19	.....	20	.....	5	.....	64	12
Louisville, Ky.	240,808	37	2	.....	4	.....	.....	.....	5	6
Lowell, Mass.	114,366	27	.....	.....	25	1	2	.....	6	.....
Lynchburg, Va.	33,497	10	.....	.....	5	.....	.....	.....	1	.....
Lynn, Mass.	104,534	16	2	1	.....	.....	2	.....	2	3
McKeesport, Pa.	48,299	.....	.....	.....	.....	.....	.....	.....	1	.....
Madison, Wis.	31,315	.....	.....	.....	1	.....	.....	.....	.....	.....
Malden, Mass.	52,243	5	2	.....	1	.....	1	.....	3	.....
Manchester, Conn.	15,859	5	.....	.....	.....	.....	.....	.....	.....	.....
Manchester, N. H.	79,607	13	.....	.....	3	.....	.....	.....	1	2
Manitowoc, Wis.	13,931	.....	.....	.....	.....	.....	1	.....	.....	.....
Mankato, Minn.	[1] 10,365	2	.....	.....	1	.....	.....	.....	.....	.....
Marinette, Wis.	[1] 14,610	.....	2	.....	.....	.....	.....	.....	1	.....
Marion, Ind.	19,923	7	.....	.....	.....	.....	.....	.....	.....	.....
Marquette, Mich.	12,555	0	.....	.....	3	.....	.....	.....	.....	.....
Martinsburg, W. Va.	12,984	.....	1	.....	.....	.....	.....	.....	.....	.....
Mason City, Iowa.	14,938	7	1	1	.....	.....	.....	.....	.....	.....
Meadville, Pa.	13,968	.....	.....	.....	1	.....	1	.....	.....	.....
Medford, Mass.	26,681	7	.....	.....	10	.....	.....	.....	2	.....
Melrose, Mass.	17,724	2	.....	.....	.....	.....	.....	.....	.....	.....
Methuen, Mass.	14,320	5	1	.....	2	.....	.....	.....	1	1
Middletown, Ohio.	16,384	2	.....	.....	.....	.....	.....	.....	.....	.....
Milwaukee, Wis.	445,008	80	8	.....	24	.....	13	.....	26	9
Minneapolis, Minn.	373,448	75	5	.....	9	.....	4	.....	16	9
Mishawaka, Ind.	17,083	4	.....	.....	.....	.....	.....	.....	.....	.....
Missoula, Mont.	19,075	3	.....	.....	2	.....	.....	.....	3	.....
Mobile, Ala.	59,201	17	.....	.....	.....	.....	1	.....	.....	.....
Monmouth, Ill.	10,346	2	.....	.....	.....	.....	.....	.....	.....	.....
Montclair, N. J.	27,087	5	1	.....	.....	.....	.....	.....	.....	.....
Montgomery, Ala.	44,039	14	.....	.....	.....	.....	.....	.....	1	.....
Morgantown, W. Va.	14,444	3	.....	.....	2	.....	.....	.....	.....	.....
Morristown, N. J.	13,410	3	.....	.....	.....	.....	.....	.....	1	.....
Moundsville, W. Va.	11,513	3	.....	.....	.....	.....	.....	.....	.....	.....
Mount Carmel, Pa.	20,709	.....	1	.....	1	.....	.....	.....	.....	.....
Mount Vernon, N. Y.	37,991	5	.....	.....	.....	.....	.....	.....	2	.....
Muscatine, Iowa.	17,713	5	.....	.....	.....	.....	.....	.....	.....	.....
Muskogee, Okla.	47,173	.....	.....	.....	1	.....	1	.....	.....	.....
Nanticoke, Pa.	23,811	.....	.....	.....	1	.....	.....	.....	.....	.....
Nashville, Tenn.	118,136	49	1	.....	.....	.....	.....	.....	1	4
Newark, N. J.	418,789	83	10	.....	27	.....	4	.....	30	5
New Bedford, Mass.	121,622	25	2	.....	.....	.....	.....	.....	13	3

[1] Population Apr. 15, 1910.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City Reports for Week Ended July 31, 1920—Continued.

City.	Population as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
New Britain, Conn.	55,385	12	.....	.....	2	.....	2	.....	4	3
New Brunswick, N. J.	25,855	.....	.....	.....	1	.....	.....	.....	.....	.....
Newburyport, Mass.	15,291	4	.....	.....	4	.....	.....	.....	.....	.....
Newcastle, Ind.	14,144	1	.....	.....	.....	.....	.....	.....	.....	.....
New Castle, Pa.	41,915	.....	1	.....	1	.....	2	.....	.....	.....
New Haven, Conn.	152,275	27	6	.....	5	.....	5	.....	7	1
New London, Conn.	21,199	.....	1	.....	.....	.....	.....	.....	2	.....
New Orleans, La.	377,010	108	3	2	15	.....	3	.....	16	15
Newport, R. I.	30,585	5	.....	.....	.....	.....	2	.....	.....	.....
Newton, Mass.	44,343	11	2	.....	1	.....	1	.....	.....	.....
New York, N. Y.	5,757,492	1,118	152	11	48	1	41	2	[1] 250	[1] 109
Niagara Falls, N. Y.	38,466	8	.....	1	2	.....	1	.....	6	1
Norfolk, Va.	91,148	.....	.....	.....	3	.....	.....	.....	2	1
Norristown, Pa.	31,969	.....	.....	.....	3	.....	.....	.....	.....	.....
North Adams, Mass.	[2] 22,019	2	.....	.....	.....	.....	.....	.....	.....	.....
Northampton, Mass.	20,066	2	.....	.....	4	.....	.....	.....	.....	.....
North Attleboro, Mass.	11,248	1	.....	.....	.....	.....	.....	.....	.....	.....
North Braddock, Pa.	15,684	.....	3	.....	1	.....	.....	.....	.....	.....
North Little Rock, Ark.	15,515	6	.....	.....	.....	.....	.....	.....	3	2
North Tonawanda, N. Y.	14,060	1	1	.....	.....	.....	.....	.....	.....	.....
Norwalk, Conn.	27,332	8	.....	.....	.....	.....	.....	.....	2	2
Norwich, Conn.	21,923	6	1	.....	1	.....	.....	.....	1	1
Oakland, Calif.	206,405	38	1	.....	.....	.....	1	.....	.....	3
Oak Park, Ill.	27,816	5	1	.....	1	.....	.....	.....	.....	.....
Oil City, Pa.	20,162	.....	.....	.....	2	.....	.....	.....	.....	.....
Oklahoma City, Okla.	97,588	21	1	.....	1	.....	1	.....	1	.....
Old Forge, Pa.	15,479	.....	.....	.....	.....	.....	1	.....	.....	.....
Olean, N. Y.	16,927	8	.....	.....	.....	.....	.....	.....	.....	.....
Omaha, Nebr.	177,777	43	6	.....	1	.....	1	.....	.....	4
Orange, N. J.	33,636	5	.....	.....	1	.....	.....	.....	.....	.....
Oshkosh, Wis.	36,549	.....	.....	.....	1	.....	.....	.....	.....	.....
Parkersburg, W. Va.	21,059	3	.....	.....	.....	.....	.....	.....	.....	.....
Parsons, Kans.	15,952	.....	1	.....	1	.....	.....	.....	12	.....
Pasadena, Calif.	49,620	5	.....	.....	8	.....	.....	.....	4	.....
Passaic, N. J.	74,478	13	1	.....	2	.....	.....	.....	.....	.....
Paterson, N. J.	140,512	.....	6	.....	7	.....	.....	.....	.....	.....
Pawtucket, R. I.	60,666	10	.....	.....	.....	.....	.....	.....	.....	1
Peekskill, N. Y.	19,034	4	.....	.....	.....	.....	.....	.....	.....	.....
Peoria, Ill.	72,184	15	.....	.....	2	.....	1	.....	.....	.....
Perth Amboy, N. J.	42,616	8	2	.....	.....	.....	.....	.....	1	.....
Petersburg, Va.	25,817	12	.....	.....	4	.....	.....	.....	2	.....
Philadelphia, Pa.	1,735,514	360	39	3	38	.....	18	.....	59	45
Phillipsburg, N. J.	15,879	5	.....	.....	.....	.....	.....	.....	.....	.....
Phoenixville, Pa.	11,871	.....	.....	.....	.....	.....	1	.....	.....	.....
Piqua, Ohio.	14,275	2	.....	.....	.....	.....	.....	.....	.....	.....
Pittsburgh, Pa.	586,198	.....	12	.....	98	.....	16	.....	22	.....
Pittsfield, Mass.	39,678	6	.....	.....	7	.....	.....	.....	1	.....
Plymouth, Mass.	14,001	1	.....	.....	.....	.....	.....	.....	.....	.....
Plymouth, Pa.	19,433	.....	.....	.....	.....	.....	.....	.....	2	.....
Pontiac, Mich.	18,006	13	3	.....	.....	.....	.....	.....	1	.....
Port Chester, N. Y.	16,727	5	1	.....	2	.....	.....	.....	4	.....
Port Huron, Mich.	[2] 18,863	8	3	.....	.....	.....	.....	.....	1	.....
Portland, Me.	64,720	13	2	.....	15	.....	.....	.....	.....	1
Portland, Oreg.	308,399	43	3	.....	19	.....	.....	.....	4	2
Portsmouth, Va.	40,693	15	.....	.....	1	.....	.....	.....	6	.....
Pottstown, Pa.	16,987	.....	1	.....	1	.....	.....	.....	.....	.....
Providence, R. I.	259,895	54	6	.....	7	.....	2	.....	.....	6
Pueblo, Colo.	56,084	15	.....	.....	2	.....	.....	.....	1	.....
Quincy, Ill.	36,832	12	.....	.....	.....	.....	.....	.....	.....	1
Quincy, Mass.	39,022	13	1	.....	3	.....	.....	.....	4	.....
Racine, Wis.	47,465	1	1	.....	2	.....	.....	.....	.....	.....
Rahway, N. J.	10,361	1	.....	.....	.....	.....	.....	.....	1	.....
Raleigh, N. C.	20,274	14	.....	.....	1	.....	2	.....	.....	3
Redlands, Calif.	14,573	6	.....	.....	1	.....	.....	.....	.....	1
Reno, Nev.	15,514	2	.....	.....	.....	.....	.....	.....	.....	.....
Richmond, Ind.	25,089	3	3	.....	.....	.....	.....	.....	.....	.....
Richmond, Va.	158,702	73	2	.....	6	.....	1	.....	12	6
Riverside, Calif.	20,496	4	3	.....	.....	.....	.....	.....	1	.....
Roanoke, Va.	46,282	19	.....	.....	.....	.....	.....	.....	1	1
Rochester, N. Y.	264,714	55	21	.....	5	.....	2	.....	8	2

[1] Pulmonary tuberculosis only.

[2] Population Apr. 15, 1910.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City Reports for Week Ended July 31, 1920—Continued.

City.	Population as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Rockford, Ill.	56,739	9	4							2
Rock Island, Ill.	29,452	7							1	1
Rocky Mount, N. C.	12,673	4								
Rome, Ga.	15,607						1			
Rome, N. Y.	24,259				9				4	
Rutland, Vt.	15,038	7			23	1	1			
Sacramento, Calif.	68,984	19	2						3	1
St. Cloud, Minn.	12,013		5							
St. Joseph, Mo.	86,498	34	2				1			2
St. Louis, Mo.	768,630	153	25	6	7		3		36	11
St. Paul, Minn.	252,465	43	18	4	4		4	1	19	4
Salem, Mass.	49,346	4					2		1	1
Salem, Oreg.	21,274	4			1					
Salt Lake City, Utah.	121,623	38	3	2	9	1			3	
San Bernardino, Calif.	17,616	6								2
San Diego, Calif.	56,412	20			1				5	3
Sandusky, Ohio.	20,226	4								
Sanford, Me.	11,217	3								
San Francisco, Calif.	471,023	106	7		1		1		30	9
Santa Barbara, Calif.	15,360	3			1				3	
Santa Cruz, Calif.	15,150	3	1		1		1			
Saratoga Springs, N. Y.	13,839	6							3	
Saugus, Mass.	10,210	3			1		1			
Sault Ste. Marie, Mich.	14,130	1	2				4			
Savannah, Ga.	69,250	25	1			1				2
Schenectady, N. Y.	103,774	7	1		13				3	
Scranton, Pa.	149,541		4		11				5	
Seattle, Wash.	356,445		5		5		2			
Sheboygan, Wis.	28,907						2			
Sioux City, Iowa.	58,568						2			
Sioux Falls, S. Dak.	16,887	15	1							1
Somerville, Mass.	88,618	16			1		1			
South Bend, Ind.	70,967	12					1			
Southbridge, Mass.	14,465	4								1
Spartanburg, S. C.	21,985	8	2							2
Spokane, Wash.	157,656				1		1			
Springfield, Ill.	62,623	18					2			1
Springfield, Mass.	108,668	26			7		6	3	4	1
Springfield, Mo.	41,169	11								1
Springfield, Ohio.	52,266	24		1	3		1		2	1
Stamford, Conn.	31,810		1							
Steubenville, Ohio.	28,259	14			5					
Stillwater, Minn.	[1] 10,198	2								
Stockton, Calif.	36,209	11								2
Superior, Wis.	47,167	6	5	1						
Syracuse, N. Y.	158,559	38	5	1	24		4		3	1
Taunton, Mass.	36,610	6	2		1				4	1
Terre Haute, Ind.	67,361	10					2			
Tiffin, Ohio.	12,962	6	1							1
Toledo, Ohio.	202,010	56	2		3		12		6	10
Topeka, Kans.	49,538	15			2				4	
Traverse City, Mich.	14,090	1							1	1
Trenton, N. J.	113,974	31	1						4	1
Trinidad, Colo.	14,413		5							
Troy, N. Y.	78,094	14	1				1		4	
Tucson, Ariz.	17,324	30				1				4
Vallejo, Calif.	13,803	3								1
Vancouver, Wash.	13,805				1					
Waco, Tex.	34,015	11								
Waltham, Mass.	31,011	3	1							
Washington, D. C.	369,282	99	6		3		8		28	6
Waterbury, Conn.	89,201		1				1		2	
Watertown, Mass.	15,188	3	1							
Watertown, N. Y.	30,404	0	2				1			
Wausau, Wis.	19,666	8								
Webster, Mass.	13,484	3			2					
West Chester, Pa.	13,403		1		1					
Westfield, Mass.	18,769	1	1	1					1	
West Hoboken, N. J.	44,386	4							3	2
West New York, N. J.	19,613	4			1					

[1] Population Apr. 15, 1910.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City Reports for Week Ended July 31, 1920—Continued.

City.	Population as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
West Orange, N. J.	13,964	1	1	.....	3	.....	.....	.....	.....	.....
Wheeling, W. Va.	43,657	8	.....	.....	1	.....	.....	.....	.....	.....
White Plains, N. Y.	23,331	3	1	.....	1	.....	1	.....	1	1
Wichita, Kans.	73,597	21	3	.....	.....	.....	1	.....	5	.....
Wilkes-Barre, Pa.	78,334	.....	.....	.....	1	.....	.....	.....	2	.....
Williamsport, Pa.	34,123	.....	1	.....	.....	.....	.....	.....	.....	.....
Wilmington, Del.	95,369	32	2	.....	1	.....	.....	.....	.....	1
Wilmington, N. C.	30,400	12	.....	.....	.....	.....	.....	.....	.....	.....
Winona, Minn.	[1] 18,583	5	.....	.....	1	.....	.....	.....	.....	.....
Winston-Salem, N. C.	33,136	14	.....	.....	.....	.....	.....	.....	1	2
Woburn, Mass.	16,076	1	.....	.....	.....	.....	.....	.....	.....	.....
Worcester, Mass.	166,106	30	3	.....	4	.....	6	.....	4	5
Yakima, Wash.	22,058	.....	.....	.....	.....	.....	1	.....	.....	.....
Yonkers, N. Y.	103,066	15	8	.....	2	.....	1	.....	.....	1
York, Pa.	52,770	.....	1	.....	1	.....	.....	.....	2	.....
Zanesville, Ohio.	31,320	6	.....	.....	.....	.....	.....	.....	2	.....

[1] Population Apr. 15, 1910.

FOREIGN AND INSULAR.

CHINA.

Examination of Rats—Hongkong.[1]

During the three-week period ended June 26, 1920, out of 6,423 rats taken at Hongkong, 4 were found to be plague infected.

CUBA.

Communicable Diseases—Habana.

Communicable diseases have been notified at Habana as follows:

Disease.	July 21–31, 1920.		Remaining under treatment July 31, 1920.	Disease.	July 21–31, 1920.		Remaining under treatment July 31, 1920.
	New cases.	Deaths.			New cases.	Deaths.	
Cerebrospinal meningitis			1	Paratyphoid fever	1	0	0
Leprosy			11	Scarlet fever	0	0	9
Malaria	28	1	[1] 38	Smallpox	0	0	[2] 1
Measles	19	3	22	Typhoid fever	47	6	[3] 96

[1] From the interior, 25. [2] From abroad, 1. [3] From the interior, 27.

GREAT BRITAIN.

Examination of Rats—Liverpool.

During the two weeks ended June 26, 1920, 291 rats were examined in the city and port of Liverpool; 2 rats were found to be plague infected. During the two weeks ended July 10, 1920, 396 rats were examined; 4 rats and 1 mouse were found to be plague infected. During the week ended July 17, 1920, 1 rat and 4 mice were found to be plague infected.

SPAIN.

Meningitis—Seville.

The following table gives the number of deaths from meningitis (all forms), by months, in Seville, Spain, from January to June, 1920. The population is said to be about 161,000.

Month.	Deaths.	Month.	Deaths.
January	40	April	31
February	46	May	36
March	29	June	52

[1] Public Health Reports, Apr. 24, 1920, p. 1032, and July 30, 1920, p. 1835.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER.

Reports Received During Week Ended Aug. 20, 1920.[1]

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
China:				
Chungking	June 20-July 3		963	
Japan:				
Nagasaki	June 28-July 18	34	13	
Java:				
West Java—				
Batavia	Apr. 30-June 3	6	2	
Philippine Islands:				
Manila	June 20-26	2		
Siam:				
Bangkok	May 30-June 12	31	27	

PLAGUE.

Brazil:				
Bahia	May 23-June 19	15	9	
Porto Alegre	June 27-July 10		1	
Chile:				
Antofagasta	July 5-11	1		
China:				
Hongkong	June 6-26	44	33	
Mexico:				
Tampico	July 26	3	2	Total to date.
Vera Cruz	July 19-25	2	2	
Peru:				
Trujillo	May 31-June 27	3	2	
Siam:				
Bangkok	May 30-June 5	1		
Straits Settlements:				
Singapore	May 23-June 5	1	1	

SMALLPOX.

Algeria:				
Departments—				
Algiers	July 1-10	7		
Constantine	do	2		
Oran	do	7		
Brazil:				
Bahia	June 6-12	1		
Canada:				
Alberta—				
Calgary	July 25-31	3		From outside.
British Columbia—				
Vancouver	July 4-10	2		
Ontario—				
Fort William	July 25-31	1		
Hamilton	Aug. 1-7	1		
North Bay	July 25-31	2		
Ottawa	do	5		
Peterborough	June 13-July 31	10	1	
Prescott	Aug. 1-7			Present at Cardinall.
Toronto	July 25-31	1		
China:				
Hongkong	May 23-June 26	2	1	
Nanking	July 4-10			Prevalent.
Egypt:				
Alexandria	June 18-24	5	2	
Great Britain:				
Glasgow	July 11-24	34	13	
Greece:				
Saloniki	May 31-June 27	1	1	
Italy:				
Messina	May 10-16			In Province, 34 cases, 4 deaths.
Do	May 17-23	2		In Province, 44 cases, 6 deaths.
Do	May 24-30	2	1	In Province, 28 cases, 5 deaths.
Do	May 31-June 6	1		In Province, 22 cases, 3 deaths.
Do	June 7-13			In Province, 9 cases, 7 deaths.
Do	June 14-20	1		In Province, 13 cases, 0 deaths.
Do	June 21-27	1		In Province, 18 cases, 2 deaths

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received During Week Ended Aug. 20, 1920—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Italy—Continued.				
Messina	June 28–July 4	1	1	In Province, 6 cases, 2 deaths.
Do	July 5–11			In Province, 3 cases, 1 death.
Palermo	July 9–15	2	2	
Turin	June 28–July 4	1		
Jamaica:				
Kingston	July 22			Present.
Java:				
West Java—				
Batavia	May 6–27	7	5	
Do	June 4–10	10	2	
Mexico:				
Laredo	July 30	2		
San Luis Potosi	June 28–July 4		1	
Spain:				
Barcelona	July 2–8		1	
Valencia	July 18–24	3		
Tunis:				
Tunis	July 13–19	3	1	
Turkey:				
Constantinople	June 13–19	1		

TYPHUS FEVER.

Algeria:				
Departments—				
Algiers	July 1–10	4		
Constantine	do			Present.
Oran	June 11–20	44		
Do	July 1–10	26		
Chile:				
Antofagasta	July 5–11			Do.
Valparaiso	June 13–July 17		29	
Great Britain:				
Dundee	July 4–10	1		
Greece:				
Saloniki	June 7–27	85	9	Among refugees from Russia.
Java:				
West Java—				
Batavia	June 4–10	4	1	
Mexico:				
Nogales	Aug. 9	1		
San Luis Potosi	July 26–Aug. 1		1	
Tunis:				
Tunis	July 13–19	3		

YELLOW FEVER

Brazil:				
Bahia	June 13–19	1		
Mexico:				
Progresso	Reported July 30	1		Confirmed.
Do	Reported Aug. 4	3	2	
Vera Cruz	July 19–25	1		3 suspicious cases, not confirmed.
Do	July 26–Aug. 1	1	2	1 suspicious case, not confirmed.
Do	Aug. 2–9	10	4	6 confirmed.
Do	Week of Aug. 14	14	6	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from June 26 to Aug. 13, 1920.

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
China:				
Chungking	May 16–22		551	
Do	June 6–19		1,210	
India				Apr. 11–May 8, 1920: Deaths, 5,612.
Bombay	May 29–June 12	76	37	
Calcutta	May 2–29	264	255	
Madras	June 13–19	2	1	
Rangoon	May 2–June 5	10	7	
Indo-China:				
Saigon	Apr. 26–May 16	56	41	Report for May 9 not received.
Do	June 7–13	74	53	
Japan:				
Kobe	June 8			Kobe, June 6–13, 34 cases. Moji, June 6–12, 10 cases. Kochi, June 6–12, 1 case. Hiroshima, June 6–12, 6 cases.
Do	June 14–27	36	24	
Nagasaki	June 21–27	7		
Osaka	....do			
Taiwan Island	May 22–June 20	60	33	
Java:				
West Java				Apr. 29–May 13, 1920: Cases, 6; deaths, 3.
Batavia	Apr. 29–May 13	6	2	
Do	May 28–June 3		1	
Philippine Islands:				
Manila	May 9–15	1	1	
Do	June 6–26	4		
Provinces				May 9–June 5, 1920: Cases, 11; deaths, 9.
Albay	May 9–15	2	1	
Cagayan	May 9–June 5	9	8	
Do	June 13–26	2	1	
Laguna	June 20–26	1		
Rizal	June 13–19	1		
Union	June 13–26	2	2	
Russia				Reported prevalent in southern Russia, June 4, 1920.
Sebastopol (district)	June 29			Reported increasing.
Siam:				
Bangkok	Apr. 25–May 29	486	308	
Turkey:				
Amassia	Dec. 24	1		Asiatic Turkey.
Kaiseri	Dec. 22	1		Do.
Karassi	Jan. 3	1		Do.
Mamuret-ul-Aziz	Dec. 31	1	1	Do.
Panderma	Dec.-Jan	16	6	
Rodosto	Dec. 29	1		European Turkey.
Smyrna	Dec. 22	3	2	Asiatic Turkey.

PLAGUE.[1]

Brazil:				
Bahia	Apr. 25–May 22	8	2	
Pernambuco	May 3–9	1	1	
British East Africa:				
Kisumu	Apr. 25–June 26	14	12	
Mombasa	Apr. 25–June 19	88	74	
Nairobi	....do	14	8	
Ceylon:				
Colombo	May 25–June 12	7	2	
Chile:				
Antofagasta	May 17–June 20	5		
China:				
Hongkong	Apr. 4–Jude 5	46	37	
Egypt				Jan. 1–June 30, 1920: Cases, 303; deaths, 174.
Cities—				
Alexandria	June 18–July 8	6	3	
Suez	May 13–June 8	12	6	3 cases, pneumonia.
Provinces—				
Assiout	May 15–June 5	7	4	
Fayoum	June 5	1		
Garbieh	....do	1		
Keneh	May 18	1		
Mariut	May 18–June 8	19	22	
Minieh	May 15	2	1	Septicemic.
Great Britain:				
Liverpool	June 20–26	1	1	

[1] Report of plague on U. S. S. Des Moines, in Public Health Rpts., Aug. 13, 1920, p. 1952, was an error.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from June 26 to Aug. 13, 1920—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Greece:				
Cavalla	July 22	1		
Do	July 29	1		
Dante	July 22	2		
Piræus	June 29–July 9	4		
India				Apr. 18–May 29, 1920: Cases, 9,639; deaths, 7,753.
Bombay	Apr. 18–June 12	85	70	Surrounding territory, June 6–12: Cases, 106; deaths, 61.
Calcutta	May 2–June 12	26	19	
Karachi	May 9–June 19	56	49	
Madras Presidency	May 9–June 25	234	181	
Rangoon	Apr. 25–June 12	87	82	
Rajshahi	May 30–June 5	1	1	
Indo-China:				
Saigon	May 10–16	1	1	
Do	June 7–13	8	1	
Italy:				
Catania	June 22–July 3	3	2	
Java:				
East Java	Apr. 23–May 5	7	7	Apr. 15–May 19, 1920: Cases, 6; deaths, 6, Surabaya Residency.
Mexico:				
Tampico	June 25	1		
Do	July 17	1	1	
Vera Cruz	June 14–20	11	1	May 29–July 24, 1920: Cases, 49; deaths, 29.
Do	July 18–24	2		
Peru				Mar. 1–31, 1920: Cases, 46; deaths, 29. Apr. 1–30, 1920: Cases, 36; deaths, 13. In coastal departments.
Callao	Mar. 1–31	6	3	
Do	Apr. 1–30	9	4	
Lima (city)	Mar. 1–31	5	3	
Do	Apr. 1–30	4	4	
Lima (country)	Mar. 1–31	1	1	
Do	Apr. 1–30	1		
Mollendo	Mar. 1–31	13	9	
Paita	....do	5	2	
Do	Apr. 1–30	2		
Salaverry	Mar. 1–31	4	3	
Do	Apr. 1–30	1		
San Pedro	....do	6	1	
Trujillo	Mar. 1–31	5	2	
Do	Apr. 1–13	7	3	
Siam:				
Bangkok	Apr. 25–May 1	3	3	
Do	May 9–29	4	2	
Straits Settlements:				
Singapore	Apr. 25–May 22	9	8	
Do	June 6–12	3	3	
Syria:				
Beirut	June 30			Present.

SMALLPOX.

Algeria:				
Departments—				
Algiers	May 11–June 30	28		City of Algiers, Apr. 1–30, 1920: 1 case.
Constantine	June 1–30	8		
Oran	May 11–June 30	84		
Bolivia:				
La Paz	May 2–31	6	8	
Brazil:				
Bahia	Apr. 25–May 22	3	4	
Pernambuco	Mar. 29–May 2	57		
Do	May 10–16	9		
Rio de Janeiro	Apr. 11–22	10	2	
Santos	Mar. 24–28	1		
British East Africa:				
Mombasa	May 2–22	2	1	
Nairobi	May 23–June 19	10	1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from June 26 to Aug. 13, 1920.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Canada:				
Alberta—				
Calgary	June 3–9	1		
Do	July 4–10	1		Patient taken from Vancouver train.
British Columbia—				
Vancouver	May 16–22	1		
Manitoba—				
Winnipeg	May 29–June 5	3		
New Brunswick—				
Gloucester	May 31–June 26	5		
Nova Scotia—				
Halifax	July 4–10	2		
Sydney	May 31–June 26	2		
Ontario—				
Cornwall	June 25–30	2		
Hamilton	June 13–19	2		
Kingston	May 31–June 19	4		
North Bay	June 23–29	1		
Do	July 11–17	2		
Ottawa	June 6–26	32		
Do	July 4–24	20		
Peterborough	Apr. 18–June 19	26		
Port Arthur	July 11–17	2		
Prescott	do	1		
Toronto	June 6–19	13		
Do	June 26–July 24	17		
Quebec—				
Montreal	June 13–19	1		
Do	July 4–10	1		
Quebec	June 27–July 3	1		
Saskatchewan—				
Moosejaw	June 26–30	1		
Regina	do	1		
Ceylon:				
Colombo	May 9–June 5	2		
Chile:				
Antofagasta	May 17–23			One case in interior.
China:				
Amoy	May 2–29		9	
Do	June 6–12		1	
Antung	May 9–June 13	3	3	
Do	June 21–27	1		
Chungking	May 2–June 5			Present.
Foochow	May 9–29			Do.
Hankow	June 20–26	2		
Hongkong	Apr. 4–May 22	17	14	
Nanking	May 9–June 5			Do.
Tientsin	May 25–31	2		
Do	June 13–19	2		
Tsinanfu	May 9–15	1		
Chosen:				
Chemulpo	Mar. 1–31	22	23	
Do	Apr. 1–May 31	37	11	
Fusan	Mar. 1–31	7	2	
Do	Apr. 1–May 31	12	3	
Seoul	Mar. 1–31	120	45	
Do	Apr. 1–May 31	196	23	
Colombia:				
Barranquilla	May 16–July 3			Epidemic.
Santa Marta	May 31–July 17			Endemic.
Cuba:				
Habana	July 4	1		From steamship Frank Hennis, from Jamaica. Arrived Santiago June 30, 1920.
Czechoslovakia:				
Moravia	Feb. 1–28	68		
Egypt:				
Alexandria	May 14–June 17	47	17	
Do	June 25–July 8	7	1	
Cairo	Apr. 2–May 6	28	5	
Port Said	do	18	7	
France:				
Brest	May 15–21	1		
Cette	June 24–30		1	
Paris	May 1–10	3		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from June 26 to Aug. 13, 1920—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Germany				Feb. 22-Mar. 27, 1920; Cases, 373.
Prussia—				
Danzig	June 20-26	1		
Great Britain:				
Glasgow	May 25-June 26	136	22	
Do	July 4-10	40	1	
London	June 13-July 10	14		
Greece:				
Cavalla	Apr. 12-18	1		
Saloniki	Apr. 5-May 30	3		May 10-23: Deaths, 4.
Sonboska	May 31-June 6	5		
Vodena	Apr. 26-May 2	1		
Do	May 31-June 6	6		
India				Apr. 11-May 8, 1920: Deaths, 5,520.
Bombay	Apr. 26-June 12	87	35	May 9-15, 1920: Cases, 26; deaths, 11.
Calcutta	May 2-29	96	88	
Karachi	May 9-June 19	15	12	
Madras	do	27	15	
Rangoon	Apr. 25-June 12	31	13	
Indo-China:				
Saigon	May 10-16	7	2	
Do	June 7-13	5	1	
Italy:				
Genoa	May 17-23	12		In Province.
Do	June 14-20	15		
Messina	May 9-June 27	59	6	Province, May 17-June 20: Cases, 87; deaths, 16.
Milan	Mar. 1-Apr. 30	29	5	
Naples	May 23-June 20	7	3	
Palermo	May 11-July 8	21	1	
Japan:				
Kobe	May 9-June 6	7	2	
Do	June 14-27	3	3	
Taiwan Island	May 1-June 20	40	11	
Tokyo	Apr. 21-May 10	5	4	
Java:				
West Java				Apr. 16-May 5, 1920: Cases, 53; deaths, 10.
Batavia	Apr. 16-May 5	36	12	
Do	May 28-June 3	36	6	
Madeira:				
Funchal	June 20-26		2	
Malta	May 1-June 15	2		
Manchuria:				
Mukden	May 2-8			Present.
Mexico:				
Guadalajara	May 1-31	1		
Mazatlan	May 19-25		1	
Salina Cruz	June 1-30	5	3	
San Luis Potosi	May 31-June 6		1	
Do	July 5-11		2	
Do	July 19-25		2	
Newfoundland:				
St. Johns	June 5-11	3		Reported at two other localities.
Shoal Harbor	July 10-16	7		July 3-16: Present at 4 localities.
Portugal:				
Lisbon	May 16-June 28		8	
Russia:				
Vladivostok	Jan. 1-Apr. 30	248	77	
Spain:				
Barcelona	May 21-June 10		6	
Do	June 18-July 1		6	
Valencia	May 23-June 26	15	3	
Do	July 4-17	6	2	
Vigo	May 31-June 26		4	
Do	July 18-24		1	
Switzerland:				
Geneva	May 9-15	7		
Tunis:				
Tunis	May 25-July 12	21	15	
Turkey:				
Constantinople	May 16-June 12	6		
Do	June 20-July 3	4		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from June 26 to Aug. 13, 1920—Continued.

TYPHUS FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Departments—				
Algiers	May 11-June 30	28		
Constantine	May 21-June 30	8		
Oran	May 11-June 11	156		
Do	June 21-30	62		
Austria				Feb. 15-Mar. 15, 1920: Cases, 60.
Vienna	Feb. 15-Mar. 15	20		
Bolivia:				
La Paz	May 2-31		5	
Brazil:				
Ceara	Apr. 25-May 1		2	
Bulgaria:				
Sofia	June 20-25	2		
Chile:				
Caleta Coloso	May 10-16		2	
Concepcion	Mar. 8-June 19		37	
Valparaiso	May 2-June 12		21	
Chosen:				
Seoul	Mar. 1-Apr. 30	4	1	
Czechoslovakia:				
Leipnik	Feb. 22-28	1		Quarantine Station.
Egypt:				
Alexandria	Apr. 14-June 17	216	62	
Do	June 25-July 1	30	10	
Cairo	Apr. 2-May 6	492	165	
Port Said	Apr. 9-May 6		1	
Germany				Feb. 22-Mar. 27, 1920: Cases, 23.
Prussia—				Among troops, 4; among persons from Poland, 8.
Danzig	June 20-26	1		
Great Britain:				
Dublin	May 23-June 19	3	1	
Glasgow	May 30-June 5		1	
Greece:				
Saloniki	Apr. 12-June 6	151	8	
Hungary				Jan. 19-Feb. 29, 1920: Cases, 14.
Budapest	Jan. 19-Feb. 29	7		
Italy:				
Catania	July 10-17	3		
Trieste	May 16-22	5		
Do	June 13-July 3	12	2	
Japan:				
Nagasaki	May 25-30	1		
Do	June 21-27	1		
Java:				
West Java—				
Batavia	May 28-June 30	5	1	
Mexico:				
Chihuahua	May 31-June 6		1	
San Luis Potosi	June 8-July 4			Present.
Portugal:				
Oporto	Apr. 4-June 12	11	4	
Siberia:				
Vladivostok	May 1-31	22	2	Jan. 1-Apr. 30, 1920: Cases, 1,264; deaths, 144.
Tunis:				
Tunis	May 24-June 27	36	18	
Do	July 6-12		1	
Turkey:				
Constantinople	May 16-June 12	27		
Do	June 19-July 3	7		

YELLOW FEVER.

Brazil:				
Bahia	Apr. 25-May 22	3		
Colombia:				
Buenaventura	June 3	1	1	
Mexico:				
Progresso	Aug. 2	1		
Vera Cruz	June 22		2	
Do	July 1-Aug. 1	5		July 27, 1920: 40 cases, not confirmed.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from June 26 to Aug. 13, 1920—Continued.

YELLOW FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Peru				Mar. 1–31, 1920: Cases, 128. Apr. 1–30, 1920; Cases, 64,
Callao	Apr. 1–30	1		At quarantine station. From S. S. Huallaga.
Catacaos	Mar. 1–31	14		
Do	Apr. 1–30	2		
La Huaca	Mar. 1–31	9		
Do	Apr. 1–30	5		
Morropon	Apr. 1–30	37		
Munuella	Mar. 1–31	12		
Paita	Mar. 1–31	81		
Do	Apr. 1–30	14		
Piura	Mar. 1–31	1		
Do	Apr. 1–30	4		
Salitral	Mar. 1–31	2		
Sullana	do	9		
Do	Apr. 1–30	1		
Salvador:				
Armenia	June 20–26	1	1	
Sonsonate	May 22–June 24	49	17	